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The Woodworker & Woodturner

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October 2015



GRAND ENTRANCE



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Welcome



We're all subject to the whims of others in this life, and never more so than when working for customers (or 'clients' as some of the more precious ones prefer to be known) in today's whirlwind world. Loading the van up today for a final (and hopefully brief) visit to our latest job, I received a last-minute text alerting me to the fact that the decorators had painted the floor of the room concerned and, despite being booked in this morning, could we come tomorrow instead? There's nothing to do in these situations but sigh a bit and start getting the kit back out again.

Good housekeeping

Fortunately there's always something else to be getting on with, and, let's face it, an extra day in the workshop is never a bad thing after all. As it turned out it gave me a chance for some (really) long overdue tidying and an opportunity to change the blade on the chop saw and to replace the missing wheel on the blade guard which had been threatening to become more than just a minor irritation. After a spot of quote preparation I was able to (finally) repair a Windsor armchair that had been knocking around for a few weeks and was in danger of losing a component or two if I didn't finish the job.

Under the bench

It's a commonplace that changed plans can often result in unforeseen benefits; it just shows the importance of remaining flexible at all times. As woodworkers we need to have a plan – or at least an

objective – which can help steer us forwards, but it's good to have an alternative should a hitch occur. I always advise my students to have an 'under-the-bench' project – something that can be worked on whenever there's a delay or an unexpected bit of spare time. I tell them: just be careful to keep all the parts together and you'll be fine.

Breaking news

Regular readers may recall a recent article on the WorldSkills competition in São Paulo, Brazil, to which the UK sent a representative team of hopeful woodworkers. I've just heard that things went very well for all concerned, with Edward Harringman winning the coveted Gold Medal in the Cabinetmaking discipline. I'll write up the full story for the next issue, but in the meantime, we send a big and hearty congratulations to Edward and the rest of the team for flying the flag and doing a great job for all of us back here in Britain.

It's goodbye from him...

There have been one or two changes here at *The Woodworker* recently. Mike Lawrence, stalwart Deputy Ed and former editor, is calling it a day, so it'll be a case of steady as she goes until the new system beds in. He'll be missed.

As ever, we continue to welcome your contributions to the magazine, so if there's anything you'd like to see in print, please don't hesitate to write in and we'll see what can be done.

Mark

You can contact Mark on mark.cass@mytimemedia.com



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October 2015

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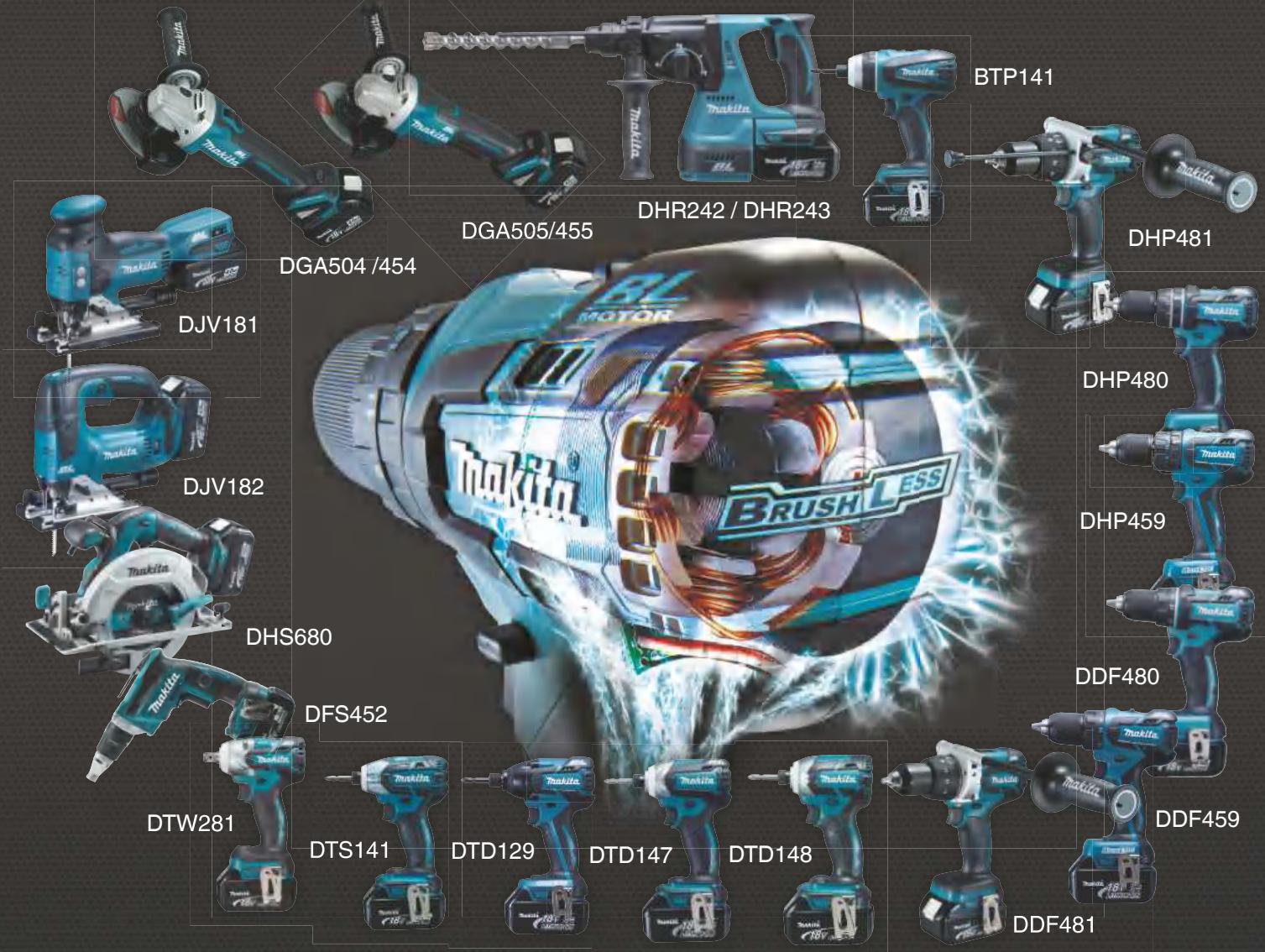


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In brief...

VAC ON THE WALL

The new Axminster Trade Series wall-mounted dust extractor is rather a neat concept and is perfectly suited to small workshops and for connecting to a stand-alone machine. When installing it, make sure that the wall it's mounted on is capable of supporting the extractor's weight.

Well made and efficient, its 1hp motor generates 1,000cu m per hour of airflow. It's fitted with a 1-micron-rated cartridge filter, making it capable of handling chippings, coarse and medium-fine dusts. It's ideal for situations where floor space is limited, such as in many woodturning workshops.

The collection bag is clipped to the bottom of the filter. A larger bag can be fitted, but the user will need to support it underneath on the floor as the weight of a full bag may pull it



off the filter. The filter has a crank handle operating a paddle to keep the interior clean; this should be used periodically to maintain filter efficiency. The price is £319.96. www.axminster.co.uk

FESTOOL TRUCK TOUR

From September 1st, the impressive Festool truck will embark on its Unplugged Tour across the UK, visiting 23 different sites in all. With a focus on Festool's cordless range of tools, the fully equipped truck will provide visitors with the opportunity to receive information, get hands-on with the tools and learn from Festool's team of experts. With about 200sq m of space on board, visitors will find enough room for all the new products for



2015, as well as Festool's complete range of cordless 18V tools and dust extractors that help safeguard a dust-free work environment.

Visitors to the truck can also participate in a

competition where a number of exclusive prizes can be won, including a 90-year anniversary limited edition CXS cordless drill and a classic men's chronograph watch, plus the new HKC cordless portable circular saw. www.festool.co.uk/roadshow

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TOUGH MUDDER SPONSOR

Bosch Professional is backing the UK series of Tough Mudder events in a partnership which brings the toughest events in the country together with some of the most durable power tools in the world for the 2015 season.

Two million people have participated so far in Tough Mudder events worldwide. Mud, ice, electricity and even fire are just some of the challenges Mudders must tackle over a 10-12 mile journey that is as much about mental strength as physical stamina.

In addition to sponsoring the Tough Mudder events, Bosch Professional Power Tools is supplying the tools necessary to construct the tough, challenging obstacles on the course. More than 20 obstacles await participants at each event, including Bosch's super-charged 'Electro-Shock Therapy', the last challenge teams need to force themselves through.



The next two events are at Cholmondeley Malpas in Cheshire on September 12-13, and in Winchester on September 26-27. For more details, go to either www.toughmudder.co.uk or www.bosch.com

POWER CARVER

The Turboshift is a power carving attachment for use with a 100mm or 115mm angle grinder. Designed to complement the Arbortech Turbo range or as a stand-alone tool, the Turboshift provides



the means to carry out detailed freehand carving.

It was developed to fill the gap between Arbortech's larger rotary carving tools and the detail capability of the power chisel or hand chisels. It's not designed for rapid removal of

wood like the larger tools, but is fine-tuned for control as the last powered carving tool used before reverting to hand chisels.

At 20mm in diameter and on a 70mm shaft, it brings the benefits of rotary shaping to tighter, deeper recesses. It has small replaceable circular carbide cutters that cut only at the very end of the shaft and can be rotated to a new edge if and when they become dull. Although it can cut in any direction at the very tip, the shaft can also be run along templates for accurate repeat work or used freehand for carving or shaping.

The unique Turboshift will be a versatile addition to any woodworker's tool kit. It costs £69.96. www.brimarc.com

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In brief...

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- The compact lock jig is made of 12mm thick high-pressure laminate, and is fully adjustable for locking faceplates up to 175mm in length. It includes four interchangeable templates to cut mortise and faceplate recesses for the most popular sash, mortise and deadlock sizes. It's suitable for doors up to 58mm thick and costs £89.95.
- The hinge jig with clamp plate is easy to use, with minimal set-up time, and is suitable for hinges from 50 to 127mm long with leaf widths between 6.5 and 35mm. It comes with the clamping plate accessory and easy-to-follow, step-by-step instructions. The price is £69.95.
- The variable angle worktop jig can cut 45° and 90° left- or right-hand joints in worktops with widths ranging from 250 to 700mm. It also enables the user to make peninsular joints, 90° square end cuts and 45° and 22.5° angle cuts. It's supplied with full instructions and a pack of four aligning pins. The price is £94.94.

www.axminster.co.uk



FIRST OPEN DAY

Following their 20th anniversary celebration in 2014, The Southern Fellowship of Woodworkers has decided to put on their very first Open Day Show on Saturday October 3rd 2015. It will be held at The Cross Barn, Palace Gate Farm, Odiham, Hampshire RG29 1JX from 10am to 3pm. Entry is free.

Exhibitors will include Axminster Power Tools



EXTRACT IMPACT

Trend has just announced the launch of the T31A – a powerful semi-professional wet-and-dry Class L auto-start vacuum extractor with power take-off for DIY and light trade use.

The T31A is packed with features, including:

- a powerful but quiet 1400W silenced motor;
- power tool take-off (up to 2200W) with auto-start feature and five-second run-on delay;
- large 35 litre capacity impact-resistant plastic container with castors;
- extra-long (7m) power cable;
- floor cleaning kit, power tool adapter, crevice tool, upholstery tool and no-foam filter.

Trend say: "We've been listening to our loyal customers' feedback and the demand has been huge for a powerful semi-professional vacuum. The T31A certainly packs a punch, and is ideal for workshop, garage and light trade applications."

To find out more about the T31A, please visit Trend's YouTube channel and Facebook group for videos of the extractor in action, or go to www.trend-uk.com

DIARY

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| 7-8 | Beginners routing |
| 7-8 | Bowls and platters * |
| 10* & 15 | Penmaking |
| 16 | Festool demonstration day |
| 17-18 | Nutcracker figures * |
| 17-18 | Woodcarving with Paul Gardner |
| 21-22 | Beginners woodturning |
- * Course held in Sittingbourne, Kent
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Bentley Woodfair

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| 18-20 | Bentley Museum, Halland, East Sussex BN8 5AF |
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European Woodworking Show

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|--|--|
| 12-13 | Cressing Temple Barns, Braintree, Essex CM77 8PD |
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| www.ews2015.com | |

Fangfest craft festival

- | | |
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| 5-6 | Fangfoss, near York YO41 5JH |
| 01759 368737 | |
| www.facebook.com/fangfest | |

Record Power Shows

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| 14 or 15 | Woodturning: make a bowl |
| 15-18 | Woodturning: bowls |
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| www.westdean.org.uk | |

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NEW CORDLESS DRILL DRIVERS

MANUFACTURER: Mafell

D&M GUIDE PRICES: See our website for details

Mafell is the latest manufacturer to enter the cordless drill driver market. In the 18V range the new **ASB18Mbi Maxi combi hammer** combines three machines in one – a driver, a conventional drill and a percussion drill – offering carpenters even greater flexibility and independence as they go about their work.

Both this and the conveniently chunky **A18Mbi Maxi 18V drill driver** are bristling with intelligent technology that improves power control, enhances ease of use and optimizes safety. At the same time, their premium battery technology offers peerless stamina and operational readiness. Both come complete with two 5.2Ah Li-ion batteries, a charger and an angle attachment, all packed in a sturdy storage box.

The smaller **A10M 10V drill driver** offers a maximum torque of 34Nm and 20 torque settings, but weighs just 800g. It comes with two batteries (2.0Ah and 4.0Ah) and a charger.

Powerful, tough and resilient – equipped with more than ample torque, brushless technology for a low weight-to-power ratio, and cutting-edge lithium-ion energy – these new cordless power drivers are a joy to use and get the job done well. The smart quick-release system gives the new tools extreme flexibility. The bit holder, chuck and angle attachment can be exchanged in a matter of seconds – a model of efficiency. The battery PowerTanks feature process-controlled technology. All the relevant factors, including the individual cell state, air-cooling and cell temperature are monitored. In addition, the floating battery cells are protected against mechanical influences.



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MANUFACTURER: Makita

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BY DUNCAN ROSE

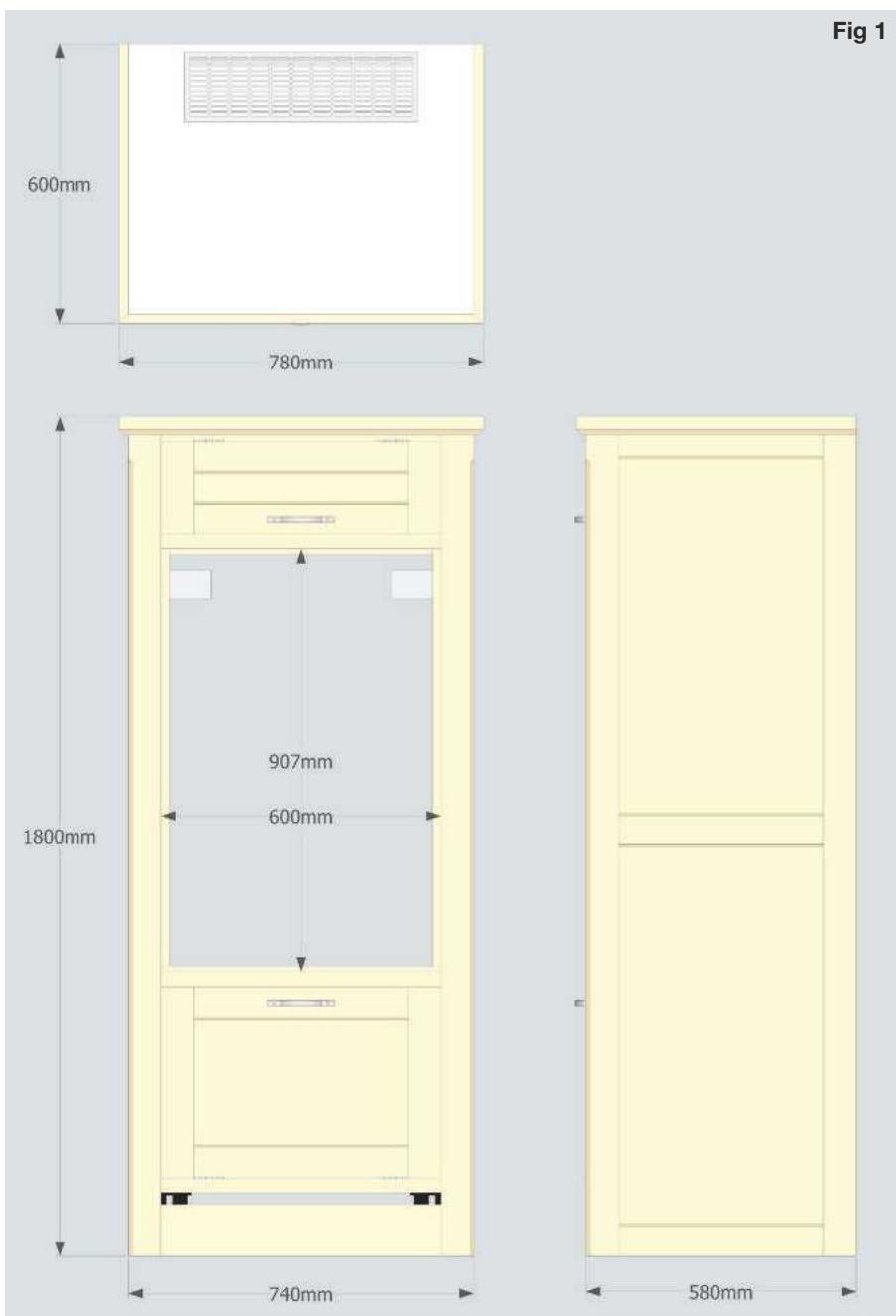
Oven ready

I was asked to make this attractive oven cabinet as part of an existing kitchen commission. Finished in ash, the cabinet presents the built-in oven at a comfortable working height, and provides a couple of handy storage spaces into the bargain

The design style is in keeping with the rest of the kitchen. Decorative chamfers along the front corner edges and rails are used to soften the appearance and ease cleaning. The top and bottom cupboards help to give the cabinet a more balanced appearance. Fig 1 gives all the relevant dimensions.

Raw materials

The cabinet was constructed using ash-veneered mdf for the sides and door panels, and birch plywood for the shelves and backs. Solid ash was used for the face frames and door frames, as well as the side trims that give the unit its frame-and-panel appearance. Wood guides and stops are fitted behind the face frame to align and then secure the oven when it's slid into position. The cabinet doors were hung using butt hinges with a satin chrome finish. Gas-filled lid and flap stays assist the opening of the doors. A top cornice completes the cabinet, and adjustable feet beneath the base ease the levelling process during installation.







1
Rout out the housing grooves in the side panels, ready for the shelves



2
Hold the carcass corner joints square using plywood webs and cramps



3
Attach the plywood back panel to the lower cupboard section using screws



4
Fit the adjustable feet to the carcass base; the front ones will carry the plinth



5
I cut the mortises in the face-frame stiles using my Festool Domino jointer

Safety first

Adequate space and ventilation must be provided, as specified in the oven manufacturer's instructions. I used these to determine the required cross-sectional areas of ventilation at plinth level, behind the cabinet and at the top. In this design there's an open air channel starting at floor level just above the plinth panel that flows to the cabinet rear, then continues upward behind the cupboards and oven, before finally exiting through a ventilation grill in the top panel. You will need to check and if necessary adjust the project dimensions to meet the specifications for your oven.

Sides and shelves

I began by cutting the sides, shelves and top panel to their final measurements using my rail saw. To conceal the visible front edge along the plywood oven shelf, I lipped it with a 4mm thick strip of ash, taken from an offcut. The lipping was glued and cramped in position and planed flush when dry.

Next, I marked the positions of the stopped housing grooves in the sides for the shelves. Then I cut the grooves, 4mm deep and 18mm wide, using my Trend Variojig clamp guide and a hand router fitted with a straight cutter, **photo 1**. I also cut a rebate in along the top inside edge of the sides to take the cabinet top panel.

The shelf and top joints are each pulled tight and strengthened using glue and four 50mm No 10 screws. I drilled counterbores and clearance holes in the sides for the screw heads. Most of them will be hidden later by the side-frame pieces; those remaining visible are concealed with ash plugs after the carcass assembly.

The main assembly

Before building the carcass, I gave the panels a sanding to make the finishing stage easier. Then I applied some glue to the housings and inserted the top and shelf panels, pulling the joints tight with screws. To assist the assembly I cramped plywood webs into the corners to hold the joints square, **photo 2**. To protect the veneer along the bottom edges of the side panels from damage, I decided to lip them with a 4mm thick ash strip.

Next I cut and fitted the backs to the cupboards, **photo 3**. My customer had asked for the back of the upper cupboard to be removable from inside to give access to a power point on the wall behind, so I attached a pair of horizontal wooden strips at the rear of the upper cupboard and secured the back from the inside.

I then attached six adjustable feet to the underside of the carcass. These are used for levelling the oven cabinet during installation,



6
Dry-fit the face-frame rail to the edge of the oven shelf using floating tenons



7
Tap the loose tenons into the face-frame mortises before fitting the frame

and also very useful for setting the cabinet true during its construction in the workshop. The front pair were positioned so the plinth could be attached to them using a pair of supplied clips, **photo 4**.

Framing the face

Next, I made the front face frame and attached it to the carcass. First I prepared the two stiles and dry-fitted them using floating tenons spaced at regular intervals, after cutting the mortises using my Festool Domino jointer, **photo 5**. I positioned the stiles to overhang the carcass sides by 7mm – the thickness of the side trims.

Then I prepared the four face-frame rails and dry-fitted them flush to the shelf and top edges with more floating tenons, **photo 6**. The rail for the oven shelf was lowered by 11mm to leave space for the bottom edge of the oven fascia. Here I added an offcut of wood to accommodate the mortises. Finally I marked the stile-to-rail joint positions, removed the frame assembly and cut the slots for the floating tenons.

While at the bench, I cut the recesses for the butt hinges in the upper and lower face-frame rails. I cut these using a home-made jig and a hand router, and then squared-up the corners with a chisel.

Finally, I glued up the face-frame components, **photo 7**, before gluing the frame assembly in position on the carcass. I then cramped everything together, checked that the joints were flush and removed any squeezed-out glue.

Frame and panel sides

Having framed the carcass front, the next job was to trim the sides with pieces of 7mm thick ash to give the sides a frame-and-panel appearance. First I attached the four stile trims and cramped them in position while the glue dried. To ease any scribing of the cabinet to the wall during installation, I positioned the rear stiles to overhang the back of the side panels by 10mm. Then I cut the matching rail trims to length, routed chamfers along their inner edges and glued them in position.

At this stage I made a pair of returns from ash offcuts and fitted them to the bottom of the face-frame stiles, **photo 8**. These reinforce the appearance that the cabinet frame is constructed using solid posts of ash.

Retainers and guides

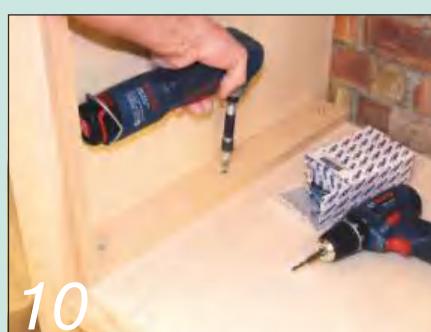
Built-in ovens are typically secured into standard kitchen cabinets using screws into the side panels that are then hidden by the closed oven doors. I therefore attached two strips of ash to the back of the face-frame stiles, extending them by 18mm to take the



8
Reinforce the stile return with an offcut of ash so it looks like a solid post



9
Attach strips of ash to the inside of the face frame for the oven fixing screws



10
Fit two offcuts of wood at each side of the shelf to act as oven guides



11
Mark the position of the opening for the top ventilation grill and cut it out



12
Chamfer and groove the lengths of cornice moulding using a router table



13
Hold the cornice mouldings in place with low-tack tape until the glue sets



14
Rout a stopped chamfer along the outside edge of the unit's front stiles



15

Prepare the door stiles, the rails and the centre panel ready for assembly



16

The lower door is fitted with a drop lid stay, mounted on a spacer block



17

Prepare stop blocks containing a rare-earth magnet and countersink them



18

Fit the plinth in position, leaving sufficient space above it for ventilation

Top matters

The decorative cornice was made as a single unit, consisting of an mdf panel that holds the three mouldings and the top ventilation grill. I began by cutting the panel to size, leaving a 6mm overhang along the cabinet sides and front, and screwed it to the carcass top. I then marked the position of the cut-out for the top ventilation grill and cut the both the panel and cabinet top using a jigsaw, photo 11.

I made the cornice mouldings from solid ash, using the router table to cut the chamfer and a 6mm deep slot to fit the panel overhang, photo 12. After cutting the mouldings to length with mitres at the corner joints, I glued them to the panel with pva adhesive. I used low-tack tape to hold them in position until the glue dried, photo 13.

At this stage I also routed a decorative chamfer along the outside corner edge of the face-frame stiles, stopped 70mm from the top, photo 14.

Making the doors

It was now time to construct the two doors using ash frames and veneered mdf panels. I cut the stiles and rails to length to suit the floating tenon method of jointing. Then I routed grooves along the stiles and rails to accept the 6mm thick panels, using the router table fitted with a slot cutter. I also cut decorative chamfers along the inner edges of the door rails.



After a light sanding the door components were ready for assembly, photo 15. I glued and cramped them up, checked that they were flat and square and left them to dry.

Hanging the doors

Next, I offered up the doors and marked the hinge recess positions on the doors. I cut the remaining hinge recesses and hung each door using a single screw in each leaf until I was satisfied with their alignment. I was then able to trim the doors to give a consistent gap to the face frame.

With the doors hung, I fitted the two door stays, carefully following the installation instructions. To position the stay brackets correctly, I needed to make some spacer blocks using some ash offcuts glued together, photo 16. These were screwed in position. I then marked the handle positions and screwed them to the doors.

Next, I made wooden stop blocks and screwed them to the face frame. The doors still required some catches to hold them in the closed position, so I made these using pairs of rare-earth magnets. I cut slots for the magnets in the doors and the stop blocks, photo 17, concealed them with some wood filler, and then glued and screwed the blocks in position.

Finishing touches

The last remaining job was to make the plinth and clip it onto the front pair of feet. I made the plinth from a piece of ash, checking the aperture above it provided sufficient area of air ventilation, photo 18.

Finally, the cabinet was now ready for finishing. I dismantled the doors and cornice and cleaned up the woodwork to remove any marks. After a vacuum clean and a wipe-down with white spirit, I applied several coats of oil.

The installation went smoothly and the cabinet didn't require any scribing to the wall. I levelled it using the legs and secured it to the wall with a pair of large metal angle brackets screwed to the inside of the side panels. The cabinet was now ready for the oven and the cooking of some fine meals.

FURTHER INFORMATION

■ Oven housing hardware

- Lift lid stay (164mm): part no 372.00.704
- Drop lid stay (244mm): part no 365.65.700
- Ventilation grille (500 x 150): part no 575.20.954

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It's a bit of a story but I won't bore you with too much detail. We have loads of 'black and white' buildings here in Herefordshire. At a local terrace, one owner had commissioned a new front door. When asked to make and fit two more to match, the maker declined: hence my involvement. Clive, for the sake of anonymity, asked me if I could make the doors and he'd fit them. "Just a couple of standard ledged-and-braced doors with frames," he said. I agreed, thinking I could knock each one out in a couple of days and the frames to match in about a week. Silly me!

Surprise surprise

Now committed, I got Clive to pop round with his drawings and a stack of door furniture. I'd already had the wood (some idigbo) planed and moulded, so all I'd need to do was joint it and put the doors together. Then I saw the furniture and the seals.

The first thing I noticed was a weather strip to be fitted to the rebates of the door frames. My profiles hadn't allowed for this, so somehow I'd have to create a 2mm groove all the way round. Then there was the three-point locking system. I was expecting a standard single-point lock and door knob set. This lot would have to be let into two trenches and what were effectively at least three large mortises, plus a bit more fettling. I took a deep breath...



BY PETER BISHOP



A perfect match

There's no reason why a traditional-style front door shouldn't benefit from the latest locks and hardware. Here's how to marry up ancient and modern

Then there were some hinges that appeared to have come off a space ship, a fancy letter box and, oh yes, a bit of double glazing too. I meekly said it was all no problem and saw Clive off with a smile. What had I let myself in for?

Making a plan

Common if analytical sense prevailed. I sat down with all the metalwork in front of me, and thought through the sequence of

actions I'd have to take to make this job work. After all, I do claim that if it has anything to do with wood, I can do it. It was time to put my confidence to the test.

It soon became apparent that I could make the doors as per usual, but would have to consider the new furniture housings and how these would be made before everything was put together. So, moving onwards and upwards, I got on with the jointing.



1

Before cutting anything for real, I made a test joint for the outer door frames



2

The frames for the two doors each consist of two stiles and three rails



3

The diagonal braces will be fixed to the rails with Domino loose tenons



4

Each door has a single brace, fitted between the middle and bottom rails



5

The hinge recesses in the door stiles are trimmed and the hinges fitted



6

The three-point locking system drops into full-length slots and recesses

Frames first

The door frame sets are made with two vertical pieces tenoned into the heads. I made a test joint first, **photo 1** – always a good idea when starting a job that you might not have done for a while. After finding the right router cutter in my toolbox, I cut the 2mm groove all the way round the framing rebate to take the weather strip. Once I was happy with this the joints were made, fitted and the pieces put to one side for later.

Clive had given me extremely precise measurements. I'd made the frames, and now the doors themselves would have to fit these with about 5mm all round for clearance. All was marked out; then mortises were cut into the stiles and step shouldered tenons formed on the rails. Once they were assembled I then cut the single, lower brace for each door and joined it in with a couple of Domino loose tenons at each end. The whole lot was cramped up dry, checked for size and squareness and then disassembled. Now it was time to tackle the furniture.

Hardware department

I had to fit three hinges per door, so I marked out the positions for them. These modern ones are quite chunky, because they have a three-way adjustment mechanism inside. It's very clever stuff, but they still need to be located correctly. I used my pillar drill and a Forstner bit of the right size to cut the bulk of the waste out, then tidied up the recesses by hand.

The three-point locking system required a bit more thought. Using my rip saw bench I made shallow, central trenches to take the first and second thicknesses of securing plates. There was also a need to make some deeper, shorter trenches to take the central, second and third locking points. These I cut out on the bench mortise machine. With a bit of minor adjustment and cleaning out, the system dropped into place. Then the holes for the handles and locks were cut through each stile using another Forstner bit.

The middle door rails need a central opening just big enough to accommodate the two-part letter box. Once cut, with drill bits and saws, the two pieces are pushed in from each side and secured with a couple of bolts. With the inner and outer flaps down, all is concealed. Clever!

Coming together

Finally I needed to run a groove round the inside of the outer door frame stiles and top rail to take a tongue for the boarding that

was going on. I used the rip saw bench again and quickly sorted this out. I could now glue up the door frames themselves once all the individual components had been cleaned up.

Care needs to be taken with idigbo and excess glue. If metal sash cramps come into contact with the glued wood it will produce a dark stain. I use masking tape and paper between the cramps and the wood to avoid this.

Each door was cramped and glued up in sequence and left to cure. I then ran round the inside, exposed edges with a bevel cutter in my router. These were all stopped a little way from each joint – a bit of cosmetic stuff to take away the harsh corners!

Preparing the boards

A bit of thought then went into sorting out the tongued, grooved and V-jointed boards that would face up each door. The two doors were of different widths so the start and end pieces were different sizes.

I worked out the face measurements of these two on each door so the boards would look balanced. I then decided where the glazed panel would go and cut some shorter pieces for these.

A few strips were required to make an extra tongue on some of the boards. These were cut and glued into the appropriate boards. All was then dry-assembled on each of the door frames, checking that there was room for a 3mm gap between each board. The gaps would allow for expansion in winter because the idigbo was very dry.

Fitting the boards

On the bench I squirted a line of pva glue onto each rail and laid the boards on. I used washers as spacers to make sure the gaps between the boards were even across the door's width. With all the boards set in place, I weighted them down so the glue would bite and left them to cure. The second door followed in a similar fashion.

I used pva glue for two reasons. Firstly, it's elastic and will move with the wood; if it were rigid the boards would probably split. Secondly, I wanted to screw each board on from the back side. It would have been very difficult to get the spacing right working with loose boards from the other side!

Bearing in mind the staining issue, I decided that the board fixing screws should be stainless steel. Each board had one central screw fixed into it from each rail and brace; this would allow the wood to move without splitting. Where possible – around the letter box, for example – the screws



7

Holes then have to be drilled in the lock stile for the lock and handle



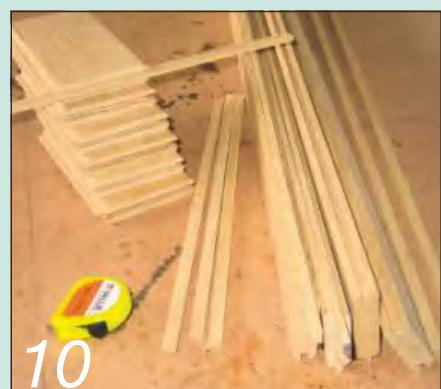
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Each door frame can now be glued up, cramped and set aside to dry



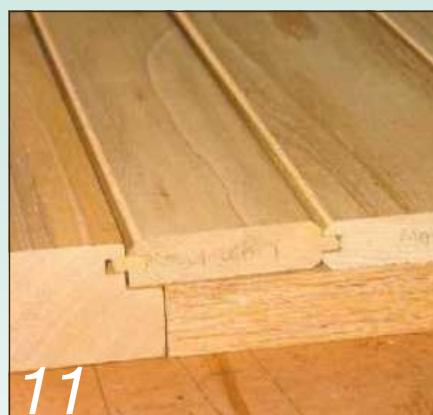
8

All the door components have now been fettled to take the furniture



10

A few strips were required as an extra tongue on some of the boards



11

Grooves round the inside of the frame rebates take the extra tongues

12

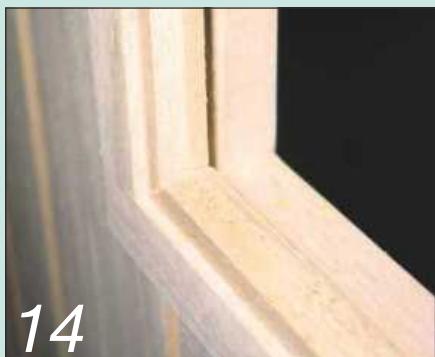
The boards are glued to the frame. A 3mm gap between the boards will allow for any swelling





13

The middle door rails have an opening to accept the two-part letter box



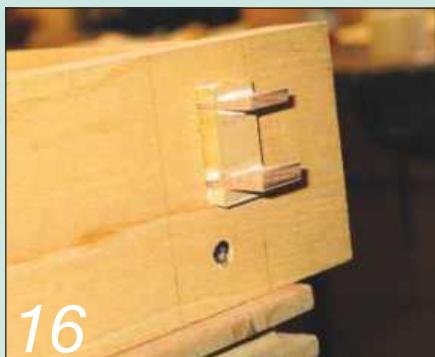
14

A bevelled bead finishes the glazing frame, ready for the sealed units



15

Now the recesses in the outer frame can be cut to take the locking points



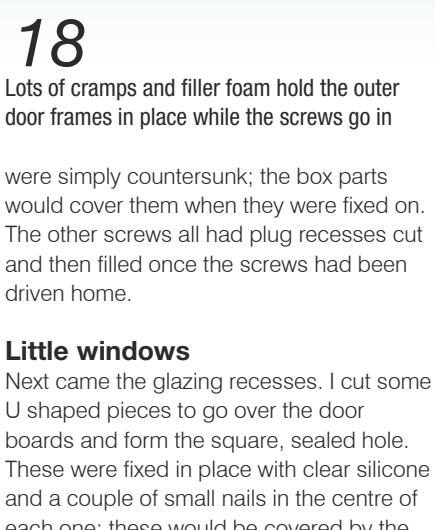
16

The outer frames have wedged tenons at the top corners for extra strength



17

The fully adjustable hinges can now be fitted in their recesses in the outer frame



18

Lots of cramps and filler foam hold the outer door frames in place while the screws go in

were simply countersunk; the box parts would cover them when they were fixed on. The other screws all had plug recesses cut and then filled once the screws had been driven home.

Little windows

Next came the glazing recesses. I cut some U shaped pieces to go over the door boards and form the square, sealed hole. These were fixed in place with clear silicone and a couple of small nails in the centre of each one; these would be covered by the

glazed units. A small bevelled bead was then produced from a square, with the bevel cut on the router table. These pieces were mitred and the outer frame was fixed in place with a small amount of glue and some copper nails. The other four pieces for each door were cut and fitted and left for Clive to sort out.

I then popped to my local builders' merchant and ordered the two small double-glazed obscured glass panels. They'd be a couple of weeks coming. Clive would fix them in place once the doors had been hung. When they arrived they fitted like a glove!

Door meets frame

All the hinges and locks were now temporarily fitted to each door. I then dry-assembled each outer door frame, using just cramps. The respective doors were dropped in place so I could mark out where the outer face of each hinge would go, and also the recesses for the three locking points. These were then cut with pillar drill and Forstner bit and on the mortise machine. Once I'd checked that they were correct, each set was cramped and glued up, wedged and screwed. Everything was then given a final clean-up and I was ready for the home run!

For the finish an Osmo Oil one-coat exterior light oak sealer was the product of choice. It was simply applied with a brush and then wiped off with a lint-free rag to give an even finish. Once it had dried I was able to fit the furniture, locks and hinges. My part of the deal was now done, several months after conception!

Delivery time

Clive called with his van, loaded everything up and took it off to the site. Working over a weekend, with some help from a mate, he took each of the old doors and frames out and popped the new ones in. I understand that all went reasonably well!

Each door had been made slightly short so that Clive could fit a sealing weather bar and draught strip at the bottom to finish things off. The double-glazed units were fixed, the letterboxes sorted and the door fit fettled so that the whole lot worked as it was supposed to.

After a few months of angst and a voyage of discovery for me the job was finally finished. I'd done my part and Clive his. The resultant facade of the three houses in a row was worth all the effort. The doors look good, the clients are happy, we're happy and I now know how to fit all this fancy modern door furniture!

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BY IAN WILKIE

Puzzles galore!

Last month I introduced you to the versatile scrollsaw and used it to make a simple project. This month I'll show you the right techniques to use for cutting out several types of jigsaw puzzle

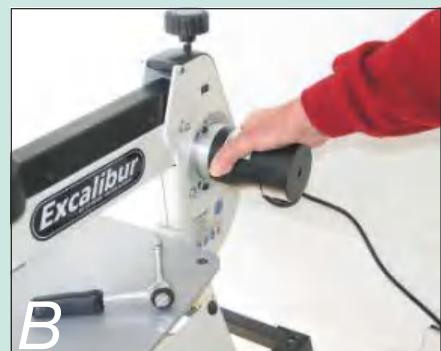
Most people associate jigsaw puzzles with the scrollsaw. Those of us with really long memories will remember the vintage Hobby's treadle fretsaws that our fathers and grandfathers used to use. It was considered to be acceptable for Victorian children to do jigsaw puzzles on a Sunday when many other pursuits were forbidden, and for this reason the puzzle images usually had a religious or educational theme. Old wooden jigsaw puzzles are highly collectable now, especially if the box is still intact. I even saw one the other day that had been made up and framed as a picture.

Practice makes perfect

The beauty of making jigsaws is that they can be personalised to suit the recipient, and it's easy to pick a design to appeal to any age group. But don't expect to become an expert overnight. It pays to practise the repetitive cuts on scrap wood to begin with, and to tackle a real puzzle only when you've mastered the technique.



A



B

ADJUSTING THE OSCILLATION

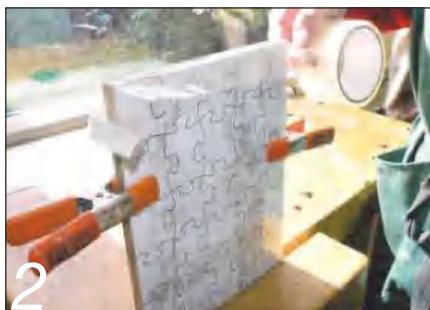
If the forwards and backwards movement of the blade – the oscillation – is too great on a scrollsaw, there's a tendency to over-run when cutting out fine shapes. To adjust the oscillation on the Excalibur EX-16 saw, first refer to the instruction book, which gives clear directions on how to do this. I had my machine for some time before I first made this adjustment, and was very impressed with the change in performance afterwards.

Start by loosening the three 4mm cap screws which hold the motor to the body, **photo A**. You'll need a small socket wrench to do this. Then rotate the motor unit clockwise or anti-clockwise with the motor running at slow speed, **photo B**. The curved slots on the motor mounting restrict the amount of movement possible. You will be able to see quite clearly how much oscillation there is. When you're happy, tighten up the screws.

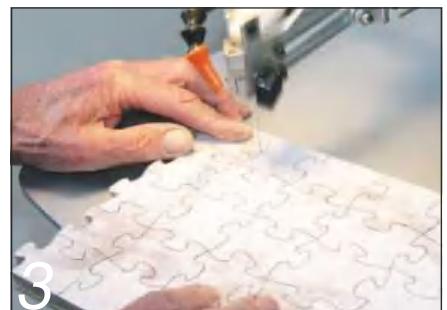
AN INTERLOCKING PUZZLE



1 Use aerosol adhesive to stick the image to the plywood and the pattern to the mdf



2 Sandwich the plywood between two layers of mdf and wrap securely with clear parcel tape



3 Fit a No 5 PGT blade in your saw and cut the six vertical strips of the puzzle first



4 Tape the vertical strips back together and cut the five horizontal ones in the same way



5 Peel off the tape and separate the layers of board to reveal the neatly cut puzzle



6 You may need to sand the outside edges lightly if the tape has left any sticky residue

This standard jigsaw puzzle consists of 30 pieces, arranged in six rows each containing five pieces. Drawing up an interlocking jigsaw pattern is not quite as easy as it may at first appear if you want the pieces to be roughly the same size and wish each piece to fit in one unique position. The rows should also align vertically and horizontally. To help you, there

are patterns on the internet you can easily search out and copy.

My drawing (**fig 1**) shows a regular pattern which works well and fits onto an A4 sheet of paper. Use a photocopier or scanner to scale the drawing up and then you can print out a copy.

Choosing an image

When selecting the picture to use for your puzzle, you need an image printed on good-quality paper or card. Attractive greetings cards, pages from a picture book or original photos can all be used if the puzzle is for your own personal use. If you intend to sell your puzzles, be aware of the rules of copyright because you may be using someone else's artwork.

Cut the picture, a piece of 6mm birch plywood or mdf, and two pieces of 3mm mdf all to the same size. Birch plywood makes a good strong puzzle with smooth edges. Sand the ply so it's really smooth on both faces. Don't sand the mdf; it's smooth enough, and you'll only be generating clouds of unpleasant fine dust.

Gluing time

Stick the picture to the plywood, **photo 1**, making sure that the adhesive covers the whole surface right out to the edges and

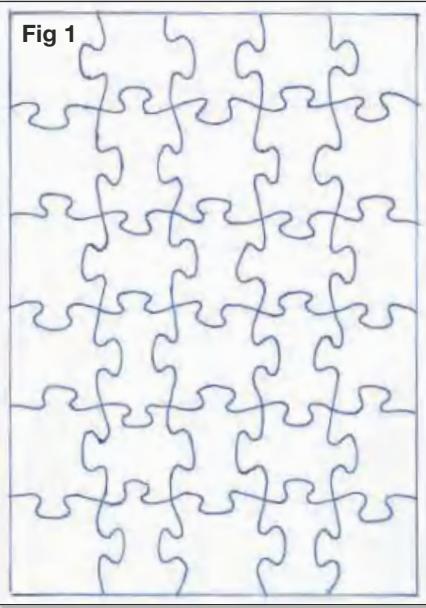
that there are no wrinkles or creases. Spraymount aerosol adhesive (available from stationers) is ideal for this task. Lay out some sheets of newspaper to catch the overspray, position the picture on the plywood and press it down all over.

Next, stick the paper jigsaw pattern to the top surface of one sheet of mdf, **photo 1** again. You can see in the photo that the thin paper pattern has soaked up the glue, but this doesn't matter so long as the outlines remain clear. The second piece of mdf will be wasted when the shapes are cut, but it reduces any risk of tear-out in the plywood.

Making a sandwich

Place the plywood with the picture on it between the two sheets of mdf, with the pattern piece on top. Although I'm going to cut only one puzzle using this method, you can stack several picture sheets between the mdf outer layers and cut them all in one go. Most scrollsaws will cut a workpiece up to 50mm thick.

Use clear parcel tape to cover up the entire surface and the edges of the sandwich, **photo 2**. I find it helpful to hold the sandwich in the bench vice while doing this so nothing can move. I was dubious about using this sort of tape at first, thinking it would clog up the blade. However, the



A STAND-UP PUZZLE

method is widely used by scrollsawers in YouTube demonstrations, so I decided to give it a go. The pattern can be seen clearly through the tape, and to my surprise the glue in the tape even acts as a lubricant.

The first cut

The amount of wood removed by sawing (the kerf) needs to be kept to the minimum. You want the puzzle pieces to fit together smoothly but not too loosely. Fit a No 5 PGT blade in your saw and cut the vertical strips of the puzzle first. Repeat this to cut the other five strips, **photo 3**.

Fit the vertical strips back together in order and tape them up securely. Then cut the horizontal strips, **photo 4**, thus releasing the individual pieces. Take your time, select a slowish cutting speed and concentrate on what you're doing. Good lighting is always important, and a magnifier can be helpful if your eyesight is less than perfect.

Finishing the pieces

Peel away the layers of tape and separate the sandwich layers to reveal a 30-piece jigsaw puzzle with smooth, clean-cut edges, **photo 5**. It may be necessary to sand the straight outside edges lightly if the tape has left any sticky residue there. You can do this by hand (ideally with a sanding block), but a disc sander is better as it ensures the edges aren't rounded over, **photo 6**.

A variation on the theme

You can use a similar technique to create a puzzle with interlocking pieces forming the outer frame and randomly-shaped pieces for the inner part of the image. Make one of the interlocking cuts in from the edge first. Then saw round the perimeter of the central section and cut the individual pieces within it. Finish off by making the remaining interlocking cuts in from the edges of the puzzle, then separate and finish the pieces as before, **photo 7**.



One possible variation has an interlocking frame and random pieces in the central area

This type of puzzle is simple to make and a delight for a child to play with. I drew out the design I wanted on squared paper with a 20mm grid, **fig 2**, and coloured it in for clarity in the photos.

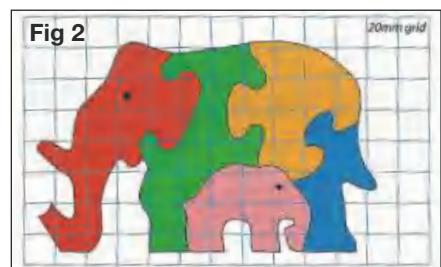
Preparing the blank

I then stuck the design to an mdf blank and cut out the five shapes so I could draw round their outlines with a sharp pencil directly onto a piece of thicknessed wood, **photo 1**. I drilled and countersunk the holes for the two eyes in the blanks so I could mark their positions precisely on the wood through the holes.

I used 18mm softwood for this example, as I find a light-coloured wood more attractive than a dark one. You can if you prefer raid your hardwood offcuts and use five pieces of different colours.

Cutting and sanding

Cut out the shapes one by one, taking care not to force the wood into the blade so the cuts are vertical, **photo 2**. Then sand all the cut edges until they're smooth. A small-diameter sanding drum is very useful for sanding the curves, **photo 3**, but you'll have to do some of the finishing of the tighter

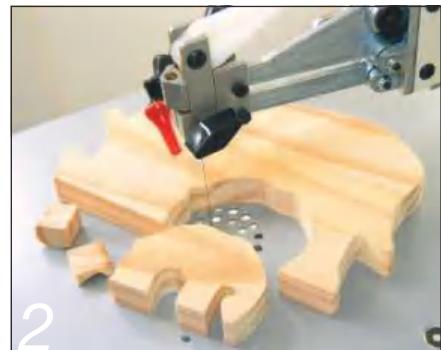


internal curves by hand with slim rolls of abrasive paper.

Finish the puzzle by drilling a shallow hole for each eye and assemble the pieces, **photo 4**. The puzzle should stand upright, but if it leans you can always sand the bottom edge lightly to true it up.



1
Make mdf patterns of the shapes, then draw their outlines directly on the wood



2
Cut out the shapes one by one, taking care not to force the wood into the blade

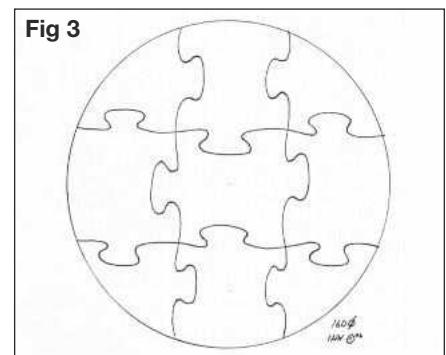


3
Sand all the cut edges smooth. A small-diameter sanding drum is very useful for this



4
Finish by drilling a shallow hole for each elephant's eye and assemble the five pieces

A CIRCULAR PUZZLE



This puzzle is made in the same way as the rectangular puzzle, but uses three round mdf blanks. The pattern shown in **fig 3** is enlarged as required on the photocopier and stuck to the top mdf blank. After

taping them together, simply cut three parallel rows from the circle, tape the strips back together and make the three cuts at 90° to the first ones. The result is an intriguing and attractive little puzzle.

DROP-IN SHAPES

These are usually the first puzzles that young children are given. Each shape or picture piece fits into a matching cut-out in the board. Ideally the picture is painted directly on the plywood and then cut out. However, most of us will probably opt to use printed pictures. If you have access to a computer, you'll find a huge range of free *Clipart* images available covering lots of different subjects.

Preparing the boards

Print your A4 picture onto good-quality photo paper and stick it to a piece of 6mm birch plywood, **photo 1**. I used PVA adhesive applied with a brush right to the edges, which worked well and didn't result in any wrinkles in the paper.

Now print an identical paper pattern. Draw the shapes you're going to cut out round each picture on this sheet, bearing in mind that you want each one to be different. Glue the pattern to a second piece of plywood; this time use Copydex adhesive because you want to be able to peel the paper off easily after cutting out the shapes. Sandwich the two boards together with the pictures uppermost and the one with the pattern on top, and stick tape round the edges. Turn the sandwich over and place a heavy weight or two on top to ensure good all-over adhesion.

Making the cuts

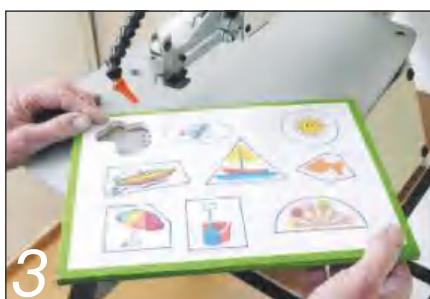
Drill a 1.5mm diameter entry hole for the blade at a corner or along the edge for each piece to be cut out, **photo 2**. Then thread a sharp No 5 PGT scrollsaw blade up through the first hole, tighten up the clamp and start the cutting out. Repeat the process for each



1
Print your A4 picture onto photo paper and stick it to a piece of plywood. Press it down well



2
Drill a small entry hole for the blade at the edge of each piece to be cut out



3
Thread in the blade, clamp it and cut out one shape. Repeat this for the other pieces



4
Separate the boards, remove the pattern and sand all the cut edges smooth

shape in the jigsaw, **photo 3**. Separate the boards and carefully remove the remains of the paper pattern from the top surface. Sand all the cut edges by hand to remove any whiskers, **photo 4**. Then apply two coats of clear varnish to all the components.

Finish the job by gluing the puzzle frame to a baseboard of thin mdf and drill a finger hole through it under each cut-out, **photo 5**. Make sure the holes are at least 20mm in diameter so there's no chance of a child's finger getting stuck when pushing the pieces out!



5
Glue the puzzle frame to an mdf baseboard and drill a finger hole under each cut-out

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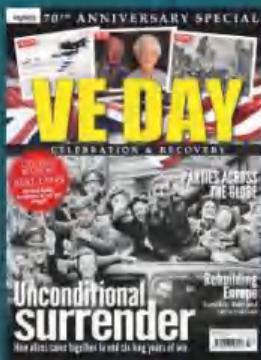


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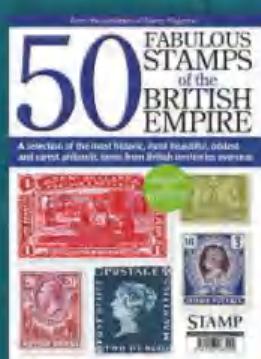
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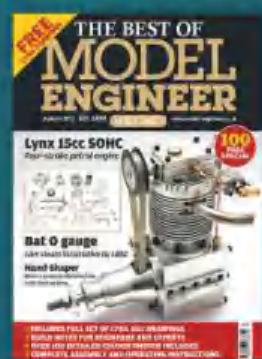
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BY ALAN HOLTHAM

Panelled planter

One of the hazards of being a professional woodworker is that you're continually at the mercy of friends and family who don't appreciate how much time, effort and materials are involved in even the simplest of jobs. I've come to dread their innocent requests, as roughly translated they really mean they're expecting something on the cheap!

People never consider the material cost of what they ask you to make; they assume you'll be using leftovers from someone else's job. And yes, it might only take you a few hours to 'knock something up', but they forget it's taken you 30 years of hard graft to learn how to do it this quickly, as well as the considerable investment you've made in all your tools and machinery.

But sometimes it's hard to say no, and the request for this modern-style panelled planter was one of those jobs that I felt just

might lead to more work (but also might not), so once again I had to smile sweetly and say: "That's no problem".

Cutting corners

The only way to keep material costs down to a minimum with a project like this is to use scrap timber. This is always a

good chance to dig out some of those short off-cuts that seem to accumulate under the bench, and which you keep saving for a rainy day. I managed to find a selection of leftover bits of softwood and two old shelves, which although superficially very tatty would be magically transformed after a few minutes work with the bandsaw and planer, **photo 1**.

With a decent-quality 6tpi blade in the bandsaw, **photo 2**, you can quickly slice up all the odd-sized pieces into the sizes you require for the project. Cut out a bit more than you think you'll need, as a few spare pieces are always handy for trial cuts when you're setting the machines to the critical dimensions required for joint making and panel raising later, **photo 3**. Also, particularly with softwood, there are often lots of large, dead knots which will seriously weaken the timber, so you need enough spare material to be able to work around them.

Square and true

For accurate jointmaking it's vital that the timber is prepared true, so spend a little

PANELLED PLANTER CUTTING LIST

All dimensions are in millimetres

Part	Qty	L	W	T
Uprights A	4	500	50	20
Uprights B	4	500	30	20
End pieces	8	200	50	20
Top frame	4	350	50	20
Panels	4	420	220	20
Corner braces	4	80	80	20
Feet	4	50	50	20
Base	1	260	260	20



1
A pile of tatty offcuts looks very unpromising...



2
...but they're quickly sliced up on the bandsaw



3
Cut extra material so you can avoid the knots



4

Make sure the planer fence is set up squarely



5

Dimension all the pieces on the thicknesser



6

Use a mitre saw to cut everything to length



7
Cut matching components to length in batches



8
Lay out the components to check overall sizes



9
Use a grooving cutter mounted on an arbor



10
Select a table insert that will clear the cutter



11
Bring the router fences in close to the cutter



12
Use featherboards to guide the workpieces...



13
...and prevent thinner ones from chattering



14
Run the old shelves through the thicknesser



15
I chose a plain angled shape for the panels

time making sure that the fence on the planer is set perfectly square, **photo 4**. Just because it was right last time you used it doesn't necessarily mean that it's still square now, so do check it regularly.

Once you've prepared the face side and edge on each piece, pass it through the thicknesser to get it all fully dimensioned, **photo 5**. Check the grain direction on each piece before you pass it through the machine to minimise the amount of finishing work you have to do later.

Cutting to length

Use a mitre saw with a fine-toothed blade to cut everything to length, removing as many knots as possible, **photo 6**. Because you're working with off-cut material that, by definition, is usually rather short in length, there's inevitably a lot more waste, but as the original material was effectively free anyway this doesn't really matter.

The best way to ensure consistency of size for matching components is to cut

them all together, **photo 7**, but make sure the stack is no taller than the fence. You don't stand a chance of getting the joints to fit properly if the components vary in length, even by a very small amount.

Lay out each frame to check the overall dimensions, **photo 8**. Notice that the uprights (B in the cutting list) for two of the frames are reduced in width, so that when they're joined together at right angles each frame will match.

In the groove

The central panel is set into a groove in the frame and the same groove also forms the joint for the frame. One of the best ways of grooving is using a dedicated grooving cutter mounted on an arbor in the router. Although the width of a groove is fixed, you can vary the depth by altering the diameter of the bearing, **photo 9**. Although this arrangement can be used freehand, it's more convenient to use it with a router mounted in a table. Select a table insert that will clear the cutter, **photo 10**.

Safe routing

Bring the router table fences in as close as possible to the cutter, again to provide maximum support, and make sure they're locked up tight, **photo 11**. Use a straight-edge to level the face of the fence through in line with the bearing on the cutter.

For safety, set up some form of hold-down mechanism to keep the work pressed against both the table and the fence. I find that using a simple featherboard arrangement is often the most effective way, **photo 12**. This business of holding firm against the fence is particularly important with the narrower frame components; these are prone to chattering unless they're supported properly, **photo 13**.

Panel cutters

The panels themselves are cut from the old shelves and are run through the thicknesser to clean up any surface marks, **photo 14**. It's amazing what lies within even the scruffiest-looking pieces!

You can create the raised profile of the



Set the router speed to suit the cutter



Check the clearance in the table aperture



Make the end-grain cuts with several passes



19

These cuts will usually create some breakout...



20

...removed by the second cut along the grain



21

Repeat until each panel slides in its grooves



22

Don't forget to groove the ends of the rails



23

Assemble the panels dry to check the fit...



24

...before gluing each frame round its panel

panels in several ways, but once again the router provides the most efficient method. Panel-raising cutters are initially quite expensive, but if you use them carefully and look after them, they should last for years.

There's quite a range of profiles available, but I settled on a plain angled shape, **photo 15**, which I felt was in keeping with the contemporary look I was trying to achieve with the planter.

Safety first

It's very important with these large-diameter cutters that you check the packaging for the maximum recommended speed, and make sure your router is set to this before you start, **photo 16**. Working at a high speed risks damaging the cutter, the router, the work or yourself, so take care.

Big panel cutters should never be used freehand, only in the router table. Check to make sure there is enough clearance in the table aperture, **photo 17**. If not, you can often still use the cutters, by making up a false tabletop from mdf and cutting a larger aperture in this.

Raising the panels

Start profiling the panel by making the end grain cuts first, **photo 18**. It's not good practice to try achieving the finished profile in one pass; take several to reach the required depth.

The end grain cuts usually result in some breakout, **photo 19**, but this is all removed by the second cut down the length of the grain, **photo 20**. Repeat the procedure several times, progressively increasing the depth of cut until the flat section is a good sliding fit in the frame grooves, **photo 21**. If you find that the cutter is burning, particularly on the end grain, try reducing the speed of cutter or hone it lightly with a Diamond file to restore its sharp cutting edge before proceeding.

When you're forming the groove in the cross-rail components of the frames, remember to groove across the end as well, as this is used to form the joint, **photo 22**. I actually forgot and had to reset the grooving cutter – another half an hour wasted for a moment's inattention!

Panel assembly

Try a dry assembly of each panel first to make sure its frame will pull together without any gaps, **photo 23**. If all is well, apply some glue to the end of each cross-rail and clamp the frame round the panel, **photo 24**. Don't apply any glue to the panel itself, as it needs to be free to move with changing weather conditions once the planter is exposed to the elements. Any attempt to fix the panels permanently in place in the frames will almost certainly result in catastrophic cracking later.

Cut some small tongues to fit into the grooves to complete the joint and tap these in place, **photo 25**. If you use the foaming polyurethane type of glue, this provides a weatherproof bond and also expands to fill in any small gaps. It dries in about half an hour, but if you leave it for several hours the excess foaming can be cut away cleanly with a sharp chisel and there are none of the staining problems PVA glue causes.



25

Cut small tongues to fill in the grooves



26

Each corner joint is made with three biscuits



27

Cramp the assembly and check that it's square



28

Fit corner braces to support the planter base



29

Glue on small oak blocks to act as feet...



30

...and use a router to round them over



31

Chamfer the corners in line with the rails



32

Cut and assemble the overhanging top frame

The planter takes shape

The four completed panels are biscuit-jointed together to form the planter box. I used three biscuits per side to maintain the alignment, **photo 26**. For the final assembly you'll need plenty of cramps. Keep checking that the box is square; it's so easy to pull it out of alignment with a carelessly applied clamp, **photo 27**.

Next, glue corner braces into the bottom of the planter. As well as adding strength, these also provide a seating for the loose base, **photo 28**. To prevent the base from rotting, it's best to raise it slightly off the ground on small feet. I used some small squares of oak for these, **photo 29**, as they're far more weather-resistant than softwood. These are simply glued in place and then routed with a tiny radius to form a neat but unobtrusive foot, **photo 30**.

The four corners of the planter box are chamfered with the router, finishing the chamfer in line with the cross rails, **photo 31**.

Adding the top frame

The top of a planter is covered with an overhanging frame made from the same sized material as that used for the panel framework, **photo 32**. The corners are biscued together and the whole assembly is just glued in place, using weights to hold it in position while the glue cures.

Once everything is set, clean off excess glue with a sharp chisel and sand the planter ready for finishing, **photo 33**.

The actual finish is a matter of choice, as there are dozens of different decorative clear and coloured finishes available specifically for outdoor use.

To maintain the planter's contemporary feel, I used a silver-coloured waterproof stain that allowed the grain to show through, **photo 34**.



33

Clean off excess glue and sand thoroughly



34

Finish the planter with a waterproof stain

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A detailed description of the magazine cover: The cover features a large, stylized title 'THE OF BATTLE BRITAIN' in red and white. Below it is a large illustration of a Hawker Hurricane fighter plane in flight, with other aircraft visible in the background. A circular badge on the right says '100 PACKED PAGES'. To the left, a dark bar reads 'Combat Stories'. A small box at the bottom left says 'WAR WORKHORSE'. The main title 'the Hurricane' is in large white letters, with 'BACKBONE OF FIGHTER COMMAND' below it. A section titled 'ALSO INSIDE...' shows thumbnail images for 'THE ATTACK OF EAGLES' (Luftwaffe assault) and 'JUNKERS 'STUKA'' (pilot division). At the bottom, there's a section for 'THE BLENHEIM DURING THE BATTLE OF BRITAIN' by an author whose name is partially visible."/>

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BY ANDY STANDING



Going halves

The halving joint is mainly used in framing work and where two components cross or meet one another in the same plane. It's easy to cut by hand or machine. There are several variations of the joint, though all follow the same basic principle

THE CORNER HALVING JOINT



1 Place the two components at 90° to each other using a try square. Either set them flush, or allow the ends to overlap a little for trimming later. Mark the overlap



2 Extend the marked line onto the edge of each piece and use the marking gauge to mark the centre line on each edge



3 Carry the line on across the end of each piece using the same setting on the gauge



4 Hold each component in turn on a bench hook and use a tenon saw to cut the shoulder



5 Now hold the component vertically in a vice and saw down to the shoulder to remove the waste



6 Test the fit of the two components. Then apply glue, assemble the joint, check that it's square and clamp it until the glue sets

When making most joints, there's a certain amount of calculating proportions and careful marking out before you can actually cut the joint. With halving joints this is kept to a minimum. Working out the proportions is easy too, because there's a bit of a clue in the name. Follow the steps here to make a corner halving joint, and turn the page for three more versions of the joint.

The corner halving joint does exactly what its name implies; it joins two frame components at a right-angled corner. It's not as strong as the cross-halving joint (see overleaf), even though it does have a reasonable gluing area. Screws or pins may be needed for extra reinforcement.

When marking joints, it's best to use a marking knife as it provides a sharper and more accurate guide for the saw blade. I've used a pencil here only because it's easier to see the lines in the photographs.

THE CROSS HALVING JOINT

Again the name gives a clue to the way this joint works. It's used where two identical components cross at a right angle, with half the width of each component notched out to create a physical interlock that gives the joint additional strength. You'll need a chisel as well as your tenon saw to cut it.



1 Use a try square to mark the position of one edge of the dividing component on the rail



2 Lay the divider on the rail with its edge on the marked line and butt the try square up against it



3 Remove the divider carefully so you don't disturb the try square and mark the second line against it to define the joint width



4 Turn the rail on its side and use the try square again to extend both of the marked lines approximately halfway across the edge



5 Take a marking gauge, set it to exactly half the thickness of the rail, and gauge the joint depth line between the two pencil lines



6 Run a sharp pencil along the gauged line to make it more clearly visible



7 Hold the rail on a bench hook and use a tenon saw or pull saw to cut down to the gauged line at each side of the joint



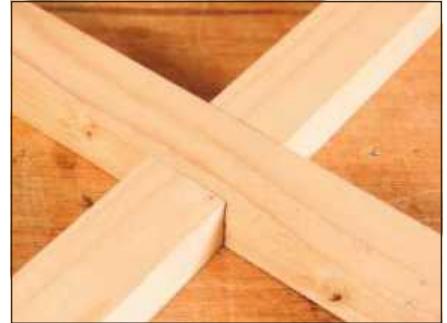
8 Make a series of closely-spaced parallel cuts down to the gauged line across the joint



9 Pare away the waste wood with a chisel. Then mark out and cut the notch on the dividing component in exactly the same way



10 Check the fit of the completed components, and pare away more waste as necessary to get a perfect fit



11 Apply glue sparingly to the two notches and assemble the joint. Check that it's square, then set it aside for the glue to dry

THE DOVETAIL HALVING JOINT

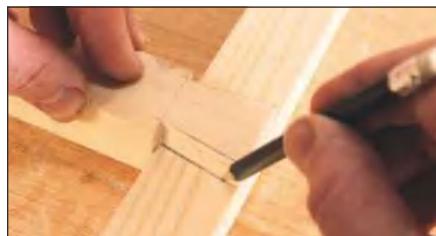
The dovetail halving is a variation on the standard T halving joint, which is used where two components meet at the edge of a frame. The dovetailed version has the advantage that it can better resist pulling forces, due to the interlocking dovetail on the end of the component forming the stem of the T.



1 Cut the stem component as for a standard T halving. Then use a sliding bevel or dovetail template to mark the slope of the dovetail on the tenon. Cut the dovetail shoulders



2 Hold the component in a vice and either cut down the sides of the dovetail with a tenon saw or use a chisel to pare away the waste



3 Use the finished dovetail to mark out the joint on the face of the cross member. Then use a marking gauge to mark the depth of the cutout on its edge



4 Hold the component on a bench hook and use a tenon saw or pull saw to cut the sides down to the gauge line. Don't overshoot it



5 Pare out the waste with a chisel down to the gauge line, taking care not to cut into the sloping edge cuts



6 Test the fit of the joint, and pare away any excess wood from the meeting surfaces to ensure a perfect fit. Then glue it up

THE MITRE HALVING JOINT

The mitre halving joint is a corner joint used when joining two moulded or profiled components, for instance when making a moulded frame. It offers a larger gluing area than a standard mitre joint, though not as large as the corner halving joint.



1 Begin by marking and cutting a mitre on one component. Then use a mitre or combination square to mark a mitre on the second component and cut it



2 Mark a line across the edge of each component from the bottom corner of the mitre. Then use a marking gauge to mark the joint depth on the edge of both components



3 The two marked-out components should look like this. You can cross-hatch the waste areas for clarity if you wish



4 Cut the shoulders of the joint first. Use a tenon or pull saw and cut carefully down to the marked line



5 Now hold each component in turn vertically in a vice and saw down the marked line to remove the waste



6 Offer up the two components to check the fit, and trim as necessary. Then apply glue to the mating surfaces, assemble the joint and clamp it while the glue sets

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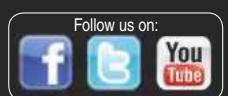
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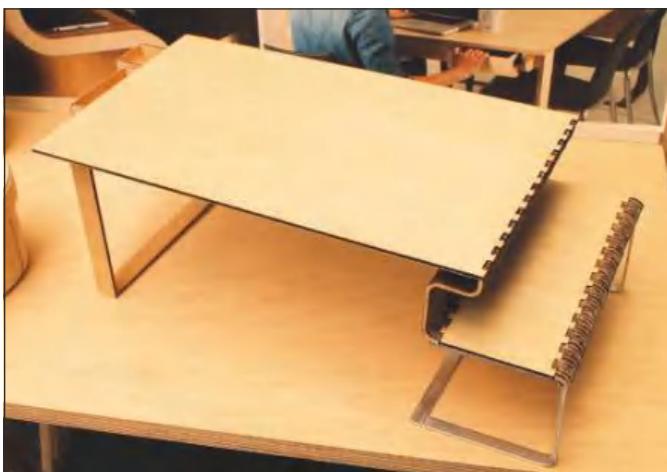
It's show time!

We all like a show... a proper big show, well organized and guaranteed to be close to bursting with new ideas, talent and enthusiasm, plus a whole load of new people to discuss things with

Such a recent show was *New Designers* at London's Business Design Centre in Islington. It's the annual showcase of the best of the UK's design student graduates, so your editor went along to see what was what.

Here are just a few of the pieces that caught his eye. It's a real shame

that we don't have the space to show them all. One or two we'll be revisiting in the months ahead, but if there's anything that really shouts out to you, don't hesitate to get in touch and we'll see what we can do about featuring it in the magazine.



This model of a very impressive multi-functional 'Dana' dining table is by Alina Bajescu of Birmingham City University. The full-sized version is a sculptural practicality in birch ply, with an integrated powdered steel bench frame and push-release drawers at the opposite end



The nucleus of the Aston University team was charged with this year's entry to the annual Shell Eco-Marathon competition. Built of lightweight ply, eco-friendly fibre and powered by a hydrogen motor, the car is the first in its class with three seats. Note the laser cut wheel trims – "just for show" said team leader Shaun McCleland with a smile!



This is a detail of a knock-down flat-pack coffee table by Chi-na Park from Northumbria University. The legs are of a satisfyingly solid nature in ash and oak, and slide ingeniously into the top where they click home to create a piece of furniture that can be dismantled, packed-up and transported at will



This black walnut dressing table by Imogen Aylwin from Nottingham Trent University is a really nice piece of traditional cabinetry. Created with Japanese inspiration, it's called *Mimasu* and features a large suede-lined drawer and two jewellery trays



One of many designs from this Bucks New Uni designer, the *Desk Chair* is an intelligent and minimal solution to creating home office space. The comb-jointed maple back lifts out of the steel frame to be flipped into desk mode, providing a useful working surface for the sitter who can just spin round into position



There's a very attractive combination of new wood – mostly oak – and reclaimed elm timber in this sideboard-esque unit by Lucia Greco, a graduate of Nottingham Trent University. It's a good-looking piece and would grace many a home. We hope to see more of her work before long



This top-quality, elegant and classic table in figured maple was made by Luke Ebbutt James. We particularly like the corner treatment of the mitred leg to frame the joint, and the way there's no overhang of the top



This chair is outstanding. Easily the best of the CNC work present, it's a stunning piece and worthy of the finest makers (think Sam Maloof for the treatment of the joints), but executed in ways beyond their ken. It's by Michael Fielding of Nottingham Trent University



This stool by Jessica Ryan-Ndegwa from Kingston University started off as a fantasy version of a mundane household object. However, after realizing that the 'mite bites' provided ergonomic assistance to those with arthritis, she coined the name *ErgoMites*



This deceptively simple slabbled table from Kathryn Furmston of Nottingham Trent University is made using 100-year-old oak from a reclaimed lock gate. Its different levels reference a canal lock's function, and it's named after navigation engineer James Brindley



The green edge of this table looks like glass, but is actually a veneer of European golden walnut on lacquered mdf with an enormous underside chamfer. This sits atop a simple dowelled frame in ash. It was designed and made by Mathew Whiteley from the Building Crafts College in Stratford, East London

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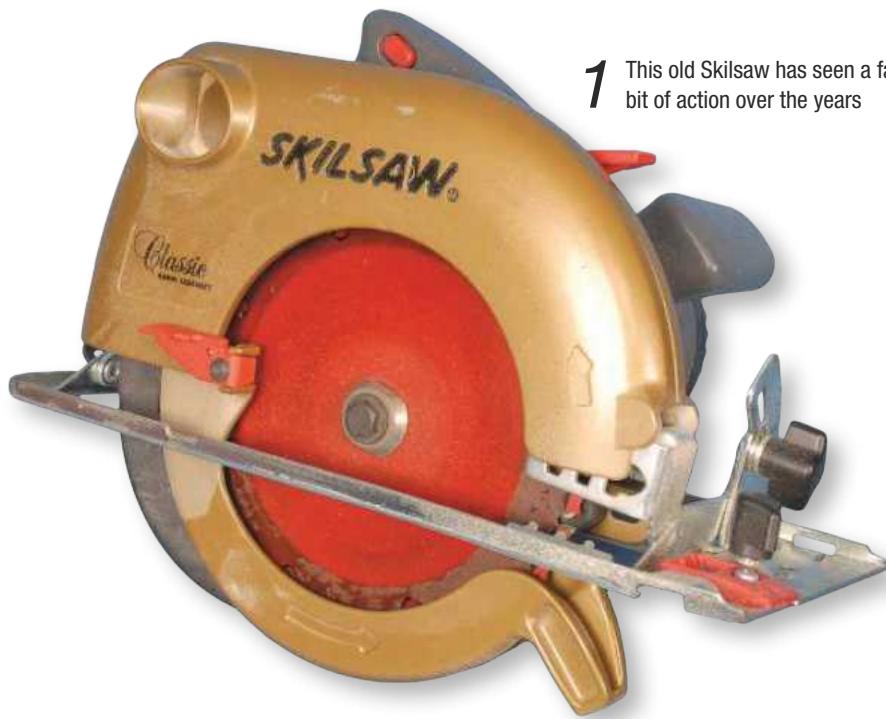
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Circular saw set-up

This series is all about setting up and fine-tuning a range of standard woodworking machines and power tools. This month we're looking at the hand-held circular saw



1 This old Skilsaw has seen a fair bit of action over the years

It was a good job that the Michel Electric Handsaw Company changed its name to Skilsaw in 1926. Today, Skilsaw has been adopted as a generic term for all circular saws, in the same way that all vacuum cleaners are called Hoover's.

The modern circular saw

The Skilsaw Classic has recently been upgraded to 1600W and equipped with the obligatory laser. It still uses the standard 185mm (7½in) blade. Other features include a safety start switch, blade height and angle adjustment, and an adjustable side fence. Most manufacturers make a similar machine, and there's not a lot to choose between them. There have been a few innovations over the years, but by and large these have been no more than marketing ploys.

However, rechargeable battery technology has developed in leaps and bounds, making the cordless circular saw a practical reality. What applies to the corded saws described here also applies equally to their cordless cousins, with the obvious exception of electrical safety – see the panel, left.

The riving knife

This device is there to prevent the saw cut (the kerf) from closing up behind the blade and causing it to jam or kick back. Although this is not so much of a problem with sheet material as with solid wood, it can happen. The riving knife should be set so that it's centred on the width of the blade and is close to but clear of the teeth. The instruction manual supplied with your particular saw will provide concise instructions and will specify clearances.

SAW SAFETY

There are several safety rules that should always be followed when using power saws.

- Always use an RCD (residual current device). All new electric installations should have RCD-protected power circuits, as prescribed by the Wiring Regulations. If your installation does not, a plug-in RCD adaptor will ensure that the tool is protected. The RCD guards against electric shock by cutting off the power supply in milliseconds if a fault occurs (such as cutting through the flex).
- Always disconnect the saw from the power supply when changing the blade or adjusting the riving knife.
- Never remove or disable any of the saw's safety features. This is particularly true of the riving knife. Rail-guided plunge saws are fitted with special safety devices that allow the blade to be plunged vertically into the cut. The stand-alone circular saw fitted with a riving knife cannot be plunged directly into the wood as the knife will hit the surface before the teeth of the blade, preventing the plunge from continuing.



Thin-kerf blades

The recent development of thinner kerf blades can pose a problem with older saws. These blades cut faster and use less power than standard blades while retaining the required rigidity. This can give rise to the situation where the gauge of the riving knife is greater than the width of the teeth. The knife should be dimensioned so it is thicker than the blade plate but thinner than the

teeth. This will not be the case if the blade has been changed from the blade originally supplied to a thin kerf blade. Always ensure that a replacement riving knife is available for your saw if you change blades.

The right blade

There are many types of blade available for circular saws. The three most common types can be described as

- rip, typically with 12 teeth on a 185mm (7½in) blade;
- fine or cross-cut, typically with 40 teeth;
- combination – a general-purpose blade for both ripping and cross-cutting, typically with 24 teeth.

Most new saws are supplied with either rip or combination blades. A fine-cut blade will give a better finish when cross-cutting and in man-made boards... but it will also cut



2 This Freud 160mm (6 3/8in) saw is a little smaller but is ideal for workshop use



3 Cordless circular saws are now everyday tools, thanks to advances in blade and battery technology



4 Lithium ion batteries and improved chargers mean that big 18V batteries are light and charge quickly



5

If your workshop isn't RCD-protected, always plug your saw into an RCD adapter like this



6

The riving knife prevents the blade from jamming in the saw cut. Never be tempted to remove it



7

Set the depth of cut so that only three teeth at a time cut through the material



8

An adjustable line follower allows the user to guide straight and bevelled cuts accurately



9

Blade changing has been made much easier with the introduction of the spindle lock



10

Remove the arbor bolt and washer and retract the blade guard to release the blade

more slowly. The choice is yours.

Although you can do most things with a combination blade, the cross-cut blade is far more useful in the home workshop. You're not going to need to rip large amounts of timber or rough-cut sheets of shuttering-grade ply in a hurry. What you are going to be doing most of the time is cutting sheet material, and the cross-cut blade is perfect for this. The depth of cut

should be adjusted to allow three teeth to be showing through the material at a time.

Blade changing

To change the blade in a circular saw, you need to hold the blade stationary. This will stop the arbor rotating and allow you to loosen the arbor bolt (turn it clockwise on a right-handed saw; it's a left-hand thread).

Most saws have a means of locking the arbor, or the washer may have flats on it to accept a spanner. If yours doesn't, use a piece of wood to stop the blade rotating as you loosen the bolt; never try to hold it still with your hands. Remove the bolt and the washer, and retract the blade guard. The blade will now slide out easily.

Insert the new blade, making sure that the teeth are facing in the correct direction. The arrows on the blade and on the saw guard should be facing the same way. Don't automatically expect the printed side of the blade to face outwards; it doesn't in the case of the Freud blades shown in some of the



11

A fine cross-cut blade fitted to the saw, and a rip blade in the foreground

pictures here!

Replace the washer and bolt and tighten it up. The rotation of the blade will tighten the arbor bolt if you haven't quite locked it up. Finally, adjust the riving knife so that it is in line with and 3mm ($\frac{1}{8}$ in) away from the new blade.

Dust extraction

Most of us know that mdf gives off noxious dust particles so small they can't be seen by the human eye. There are also several solid woods that, when sawn, can give off an irritant dust. These concerns are more relevant in a commercial environment than in the home workshop, but it's still wise to use extraction and to wear a dust mask whenever practical.

The circular saw makes a lot of dust in use. For this reason it is advisable to use low-volume high-velocity (LVHV) extraction. This is best provided by one of the combination workshop vacuum/power tool extractors. These are fitted with a socket into which the power tool is connected. As the tool is switched on, the extractor is automatically activated. Any dust that escapes the attention of the extractor can be cleaned up using the machine in its vacuum cleaner mode.

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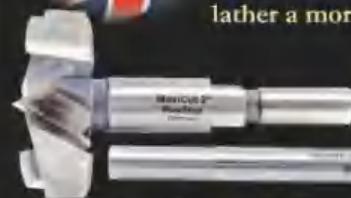
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Thanks to the generosity of Woman with Debit Card, I recently acquired as a birthday gift my first lathe and kit of turning tools. Well, I say first – that's if we ignore a brief dabble back in the 1980s with a noisy and vibration-prone drill-powered lathe and a very dull beginner's toolkit. Unsurprisingly, that encounter with turning didn't last long, but I've never lost the yearning for a proper experience of it; hence the birthday present.

Where to start

So the first question was: 'What lathe?' There's a very wide choice out there, and



BY MICHAEL FORSTER



Turn back the clock

I've been reading Alan Holtham's current series on turning for beginners with great interest, as I'm hoping to turn myself into a proper turner. I thought I'd tell you how it's been going

I wanted to get something decent but within certain constraints. Firstly, I didn't want to exploit Mrs F's generosity more than was fair, and secondly I don't have endless space in my shop. So I took the same line with turning as I do with making, which is to concentrate on producing small items that suit the space available. However, it would be good to have something I could expand if that changed, and both the lathes I eventually shortlisted had extension kits available.

Making a choice

We initially looked at a variety of possibilities, including some seriously good starter lathes from Jet and Axminster – both suppliers of quality kit and excellent service. However, we found ourselves returning like homing pigeons to Record Power's website. They do a very broad range of lathes with accessories specifically designed for them, they offer a terrific five-year warranty, and I've always been impressed with their customer service.

Of the two Record lathes that suited my spec – the DML 305 and DML18SH-SK – the latter offered a couple of features that set it apart from its rivals, so we decided to hop over to the Derbyshire showroom and take a closer look at both of them.

Features galore

Each lathe had its own unique features, which complicated the decision. The DML305, with its unitary cast-iron bed, would make set-up very simple, give it lots of weight and stability and allow me to move it around easily should I so wish.

I'd been warned about the problems of vibration with woodturning and the weight should be a big help there. This model also has an indexed tailstock which might well be something I'll appreciate later when my ambition progresses with my turning skills.

The markedly different DML18SH-SK was also tempting but for quite other reasons. It came with a starter kit of useful-looking turning tools that I hoped would reduce the start-up costs considerably. There would undoubtedly be more tools to buy, but I was confident that these would get me going in learning the basic skills. However, I suspected that the saving on those extras would soon become insignificant against the ongoing cost of chucks and other kit, so it would be unwise to choose a lathe just on that basis.

Decision time

The DML18SH-SK did have another advantage that ultimately proved decisive: a swivelling headstock. I'd talked to enough turners to know the value of being able to swivel the workpiece into a better position when turning bowls, allowing a more



There's quite a bit of assembly work to do with this type of lathe

The optional leg-stand proved much more robust than my old bench



This was the outcome of my first lesson, and shows the three tools I used



Session 2 at the club saw my first proper project completed – a honey dipper

comfortable working position and keeping the gouge handle clear of the bed for easier movement. Its main disadvantage, it seemed to me, was the separate bed bars which looked less robust than the solid cast iron construction of the DML305 – but I'd seen a lot of pro turners using such lathes and felt reassured.

Our visit to Record Power was enjoyable and informative, and home we came rejoicing with the DML18SH-SK in the car boot. I did have just one niggling doubt: should I have bought the optional leg-stand at the same time and taken advantage of the discount?

Setting up

Lathes of this type obviously take more setting up than the unitary models, but it wasn't a difficult task, especially with the aid of the free DVD on which Alan Holtham demonstrates the process as well as some basic turning techniques.

Initially I set it up on top of a built-in

cupboard, where it vibrated away uncontrollably as I turned. I already had a new workbench on order, so when that arrived I ripped out the cupboard and moved my old workbench into the turning corner, dismantling and rebuilding the lathe on that.

Sadly, even that wasn't adequate so I did what I should have done in the first place and purchased the optional leg-stand. So I've now set up my lathe no fewer than three

times and dismantled it twice. I should have listened to those niggling doubts!

Learning curve

Before I got to the setting-up stage though, I was determined this time to give myself a decent start and joined my local club, Trent Valley Woodturners, who run regular beginners' courses open to the public. I highly recommend this approach, and a



My second project – a bowl – introduced me to a whole raft of new learning



The chucking spigot looks good on the finished article with a few decorative rings added

good place to start looking for a local club is the Association of Woodturners of Great Britain (www.awgb.co.uk/club-list/).

Under TW's careful and expert tutelage, I was soon reassured that this time I was going to learn properly. They began, as expected, by giving me a guided tour of the lathe and its perils before finding a piece of softwood and showing me how to use the roughing out gouge. About the only thing I knew about turning was about 'dig-ins' and the old turners' mantra 'Keep the bevel rubbing'.

That gem of basic knowledge might have been why the first session went remarkably well. One of the members then suggested I turn a few beads and coves. On reflection, that was less helpful; I really felt the need first of all to become fully proficient in the basic skill of turning a cylinder, of constant diameter and to a reasonable finish. This went pretty well, and in my second session I was encouraged to turn a rather nice little honey-dipper using just a couple of gouges and a parting tool.

Plane sailing

My confidence was growing, and the following week I was introduced to 'planing' with the skew chisel – a technique I found very tricky to master at first. Seasoned turners told me it was 'just like a plane' and the bevel equated to the bed, so keep the bevel rubbing and all will be well. It's a nice theory – but it's not a plane, is it? When I use a plane, the bed extends ahead of the cutter and limits its depth of cut. With the skew I have to hold the tool steady and maintain the angle of cut myself – and take it from someone who's very much at home with a plane: this is a different ball-game altogether.



12

The first towel roll cylinder is finished, complete with an open spigot at the other end

Practice makes perfect

I knew that it was only a matter of practice – but the practice had to be frequent and conscientious. So I decided that every day, when possible, I'd spend at least a few minutes at my own lathe just turning cylinders.

Something I soon learned was that I could maintain the cutting angle of the tool much better if, instead of thinking about the angle or the hand position, I tried to maintain an even pressure with my arm against my side. One of the keys, my tutors had emphasized, is to move the body but



Serious repetitive practice of the basic skills is the quickest route to proficiency



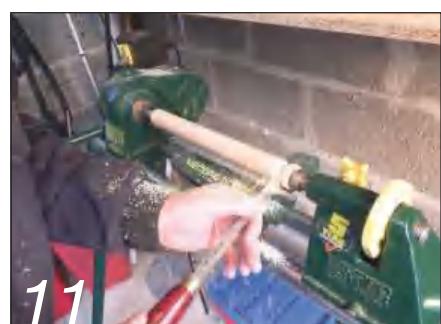
I soon discovered that cheap softwood doesn't easily turn to a fine finish



This is where practice with the skew comes in as the finish on my cylinders improves



As an early attempt in horrible timber I was quite pleased with this result



The blind spigot on the end of the towel roller is cut in with a parting tool

getting married and I really wanted to give my very first turned bowl as a wedding gift; I knew it would have significance for the couple far beyond its actual value.

My mentor selected an ash blank for me which he then centred and attached to a faceplate before supervising me as I trued it up and turned a 'chucking point' on what would be the base. I then continued, under watchful eyes, to shape the outside of the bowl using one of the club's long and strong bowl gouges. I found the inside more challenging to turn than the outside, but the outcome was not unsatisfactory and the gift was enthusiastically received – flaws and all.

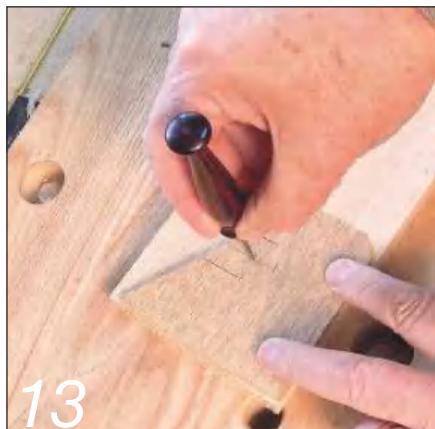
keep the feet still as far as possible. This approach, also emphasized when I turned my first bowl, was indeed an important key to success and did in fact remind me of hand-planing where as far as possible the arms and feet stay still and the body moves.

Bowled over

I'll come back to these practice pieces shortly. Meanwhile the club's training moved on and, with my skills and confidence growing, I was asked what I'd like to turn next. As it happened, a very dear friend was

A simple starter

That project had taken up most of the remainder of the course, but I was glad to have done it as I then felt confident about



13

I cut a simple template with a hole for the roller centre to mark out the brackets

practising at home. I purchased for myself the additional tools I'd used at the club, including a chuck for bowl turning, and set out to consolidate the basic skills I'd learnt. I decided to make some kitchen towel holders for the workshop.

I bought a long length of horrible 50mm sq pine from the local DIY store and cut it into a pile of short pieces, each about 75mm longer than the core of the towel roll. I reckoned that any roughness on the cylinders would be hidden by the roll, so turning a few was a good way to practise.

Using the cheap timber had a couple of benefits. Firstly, I didn't mind if it ended up as shavings, and secondly I reckoned that if I could get a decent finish on that then I could handle pretty much anything! My intention was simply to turn, turn, turn until I was producing reasonably cylindrical rollers with a passable finish straight from the tool. The holders would then be positioned at strategic points around the workshop to dispense paper towel wherever it was needed.

Knotty problems

Of course, I didn't have to work to a specific diameter – that can be the next stage of my learning – and it didn't matter if the finish wasn't universally wonderful; it's only a towel roller! That knowledge helped me relax into the task and I began the roughing out. The pine, inevitably, had lots of knots in it so a protective visor (always advisable anyway) was absolutely essential, as was a light touch with the tool.

As I began I wasn't even sure that the stuff was turnable (not by a beginner, anyway) but I was pleased to complete a number of cylinders without any dramas of the kind I half-expected. However, it was a bit of a shock when I first stopped the lathe and saw the ragged finish I was getting. At the club, with the exception of my very first



I positioned the first towel roller right by the lathe, and others around the shop



A safety visor is the minimum of protective equipment a turner should wear

session, I'd worked only in nice, well-mannered hardwoods. Ah, well: this would be a useful challenge as I sought to master the skew! One thing I'm determined about is that I'm not going to use abrasives to compensate for poor turning. I want the best finish I can get from the tool itself. That way, I'll know I'm handling the tools well.

Rough and ready

Within just a few days – and with plenty of my horrible pine blanks still to go – things were starting to look better. My music training and experience had taught me that the great error beginners make is to stop practising too early. The old adage was: 'Don't practise just until you can play it well. Practise until you can't play it badly'. The key to that is concentrated practice, focusing on one skill at a time. So I continued roughing and skewing until I'd exhausted my pine lengths just making cylinders. Turning the spigots at the ends was a simple matter of cutting in with the parting tool and then lengthening the recess before parting off.

Simple brackets

The mountings that turn scrap practice pieces into useful towel rollers are simply drawn round a template (itself sketched freehand), band-sawn, sanded and then screwed to backing boards for fixing to the wall. One of the ends has a hole for the



I'm hoping my Sorby ProEdge machine will help me explore sharpening safely in the future

roller spigot while the other has a slot to allow the roller's removal.

The rollers were then strategically placed around the workshop for the various cleaning-up operations that have to take place, especially where gluing and sharpening are concerned.

What about sharpening?

I haven't mentioned sharpening in this article. That's emphatically not because the subject isn't important but it's certainly worth an article in itself, and one better written by an expert rather than by me. One of the benefits I found of going on a supervised course was that I was able to concentrate on just using the tools as my mentors were very happy to sharpen for me while demonstrating the skill.

The club has a traditional grinding wheel with a simple shop-made jig to help maintain the angle of the tool, and they emphasized the importance of the shape from a safety as well as quality point of view, sweeping back the wings of my fingernail gouges to help me avoid dig-ins. I think the best thing I can say about sharpening is that it really is worth getting some practical tuition on this if nothing else – whether from a local club or a proficient turner employed privately.

So this has been my introduction to the mysteries of turning. Why don't you give it a go yourself?

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BY COLIN SIMPSON

Tapered oval

Sometimes it's fun to experiment with your turning, and my experiments usually involve multi-centred turning. Here's a simple example that will introduce you to several new techniques

About 12 years ago I saw a tapered oval vase that was clearly turned on more than one centre. Unfortunately I can't remember the turner's name or I would credit him here. I'm also not sure how he made it! Anyway, during one of my experimental periods I thought I'd try to work out how he'd done it. The piece looks quite simple, but is actually turned on four different centres. This is the result.

Little and large

I started with two 75mm square blanks. One was 170mm long; this will form the vase. The other was about 110mm, and will become a plug. Find the centre of all four long sides of the vase blank



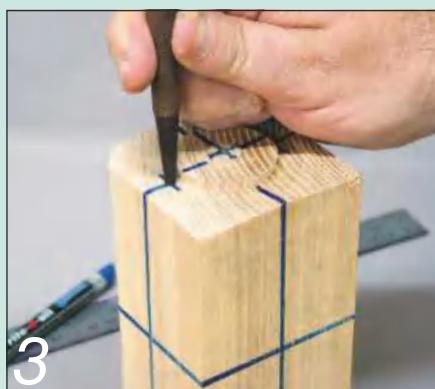
1

This image shows the marking out required on the two blanks



2

Use a $\frac{3}{8}$ in spindle gouge to turn a spigot on the tailstock end of the blank



3

Renew the marking-out lines and then centre-punch the centres



4

Mount the blank transversely between the centres on the two sides



5

Use a spindle gouge to cut a cove in the end of the rotating blank



6

It's a difficult cut to make; the end product should look something like this



7

Stop the lathe and sand the cove smooth with a small rotary sanding drum



8

Drill a 22mm diameter hole about 50mm deep in the centre of the cove

and draw a line along its length. Continue these lines around both ends to give their true centres. Mark two new centres on each end about 15mm in from the edge, but make sure these centres are on the same plane at each end. Now measure about 70mm from one end and draw a line round all four sides.

Full marks

This marking out sounds difficult, but it's harder to describe than it is to do. Take a look at **photo 1**; this shows what needs to be done. For accuracy I've centre-punched each centre.

There are two more centres that need to be centre-punched. These are on two sides of the blank where the 70mm square line crosses the centre line of the side. It's important that the two sides you choose for these centres are the ones from which you measured the 15mm offset. In **photo 1** these will be the top and bottom surfaces.

Mark out the second blank in the same way. However, you only need to mark the two 'off centres' on one end, and there's no need to square a line around the blank.

Start with a spigot

Mount the vase blank between its true centres at each end with the 70mm line nearest the tailstock. Don't turn the blank to a cylinder yet. Turn a spigot at the tailstock end to fit your chuck. I used a $\frac{3}{8}$ in spindle gouge to do this. The initial entry is into square stock so, to avoid a catch, hold the gouge well over on its side and keep the handle low, **photo 2**. Remove the piece from the lathe, renew the centre lines across the spigot and re-mark the two 'off centres'. Centre punch these centres, **photo 3**.

Getting tricky

Now mount the stock transversely between the two centres on the two sides of the blank, **photo 4**. Adjust the toolrest and rotate the piece by hand to make sure it's free from any obstructions. Lower the speed of the lathe as the blank is very out of balance in this orientation.

Switch the lathe on and use a $\frac{3}{8}$ in spindle gouge to cut a cove in the end of the rotating blank, **photo 5**. This is a difficult cut because you're cutting more air than wood. It's also hard to see the revolving wood. I put a dark sheet behind the work so it contrasts with the blank and helps me to see the ghosting more easily.

Take gentle cuts and try to aim for a shallow cove – something like **photo 6**. It is very likely that you will get some breakout or splintering of the wood, as I have. However, so long as it isn't too severe, it will be turned away at a later stage. Stop the lathe and sand the cove with a rotary sanding drum, **photo 7**.

Drilling out

Remove the wood from the lathe and screw on your four-jaw chuck. Mount the vase blank in the chuck using the spigot created at step 2. Fit a 22mm spade bit in a Jacobs chuck and load this into the tailstock. Drill a hole about 50mm deep in the centre of the cove, **photo 8**.

Fitting the plug

Next, mount the second blank between centres and turn a 22mm spigot about 45mm long on it. Leave about 25mm of the blank square; don't be tempted to turn the entire piece to a cylinder. The 22mm spigot should be a tight fit in the hole you just drilled in the vase.

Mount the vase on this 22mm spigot and align the centres of the sides of the vase and the plug. Make sure that the off-set centres are in the same plane on both pieces. I used hot-melt glue to lock the plug in place and prevent it spinning on the vase, **photo 9**.

Now use a spindle roughing gouge to knock the corners off both the vase and the plug, but don't turn it to a complete cylinder, **photo 10**. You want the centre lines along the blank to remain. It's also very important not to turn away the off-set centres, so keep the last 25mm or so at each end nearly square. Stop when your workpiece looks have something like **photo 11**.

Going oval

Next mount the piece on one pair of the off-set centres. Use a spindle roughing gouge to turn one side of the vase, **photo 12**. Continue turning this side until you reach the centre line along the vase's length. There's just a little more to go in **photo 12**. **Photo 13** shows the orientation of the gouge as it cuts. Keep the hand low and take light cuts, as you'll be cutting more air than wood. You should be aiming for something like **photo 14**. When you reach this stage, move the piece onto the second pair of off-set centres and turn this side, **photo 15**. You now have an oval cross-section with two parallel sides.



9
Turn a 22mm spigot on the second blank and glue it into the drilled hole in the vase



10
Knock the corners off the two sections, but don't turn it to a cylinder



11
Keep the last 25mm or so at each end of the piece nearly square



12
Mount the piece on one pair of off-set centres and turn one side of the vase



13
Keep the hand position low as you will be cutting more air than wood



14
Continue turning until you reach the centre line along the vase's length



15
Repeat the process on the second pair of off-set centres to get this shape



16
I found it best to taper the blank towards the base with a spindle gouge



17

Carry on until the two sides are as equal as possible. Then sand both sides



18

Use a bronze wire brush to remove the grain's softer spring growth



19

I used an airbrush to blend in the different colours seamlessly



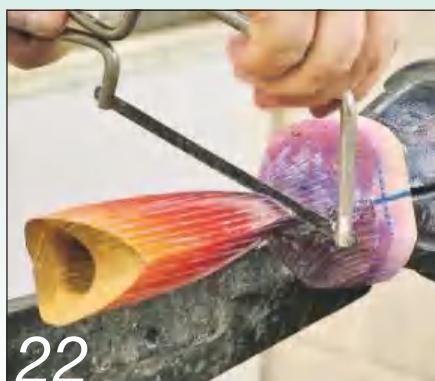
20

I then lime-waxed the piece and removed the excess wax with liquid paraffin



21

Open up the neck of the hole using a gouge, blending it smoothly into the cove



22

Use a fine-toothed saw to cut off the finished vase from the waste

Creating the taper

Next you need to taper the sides towards the base. I found it best to do this with a spindle gouge, **photo 16**. Taper one side, then mount the vase on the opposite off-set centres and taper the other side in the same way. You can keep swapping the centres until you're happy that the two sides are as equal as possible. Then hand-sand them, **photo 17**.

Colouring time

I decided to colour my piece and then to lime-wax the grain, but if you want to keep your vase looking natural you can skip the next three steps.

Use a bronze wire brush first to remove the softer spring growth so the liming wax can penetrate the wood grain, **photo 18**. I coloured my piece with acrylic airbrush paints, **photo 19**, starting with purple at the bottom of the vase and working through red, orange and yellow towards the top. When this paint was dry I sprayed on an acrylic lacquer to seal it.

When this was dry I should have used the liming wax, but I forgot! Fortunately this oversight didn't matter, because I had another opportunity as the sequence from here on isn't important.

What I did was to remove the plug from the vase and remount the vase in my chuck, using the spigot. Then I lime-waxed the piece, **photo 20**. I removed the excess liming wax with paraffin oil or liquid paraffin as this wouldn't react adversely with the acrylic lacquer.

Finishing off

I then widened the mouth of the hole in the vase and blended it into the original cove, **photo 21**, using a $\frac{3}{8}$ in spindle gouge. Point the flute of the tool to about 10 o'clock and use the left-hand wing as a scraper. Start in the hole and pull the tool out, gently rounding over the lip.

Finally I decided where the bottom of the vase would be and cut it off using a fine-toothed saw, **photo 22**. Great care is needed here to ensure a good square cut, but I felt this method was safer than parting it off. I also thought there was a possibility that the grain might tear and spoil the colouring on the sides if I used a parting tool.

This project isn't for the faint-hearted, but it might be something you would like to consider if you want to take your turning to the next level.

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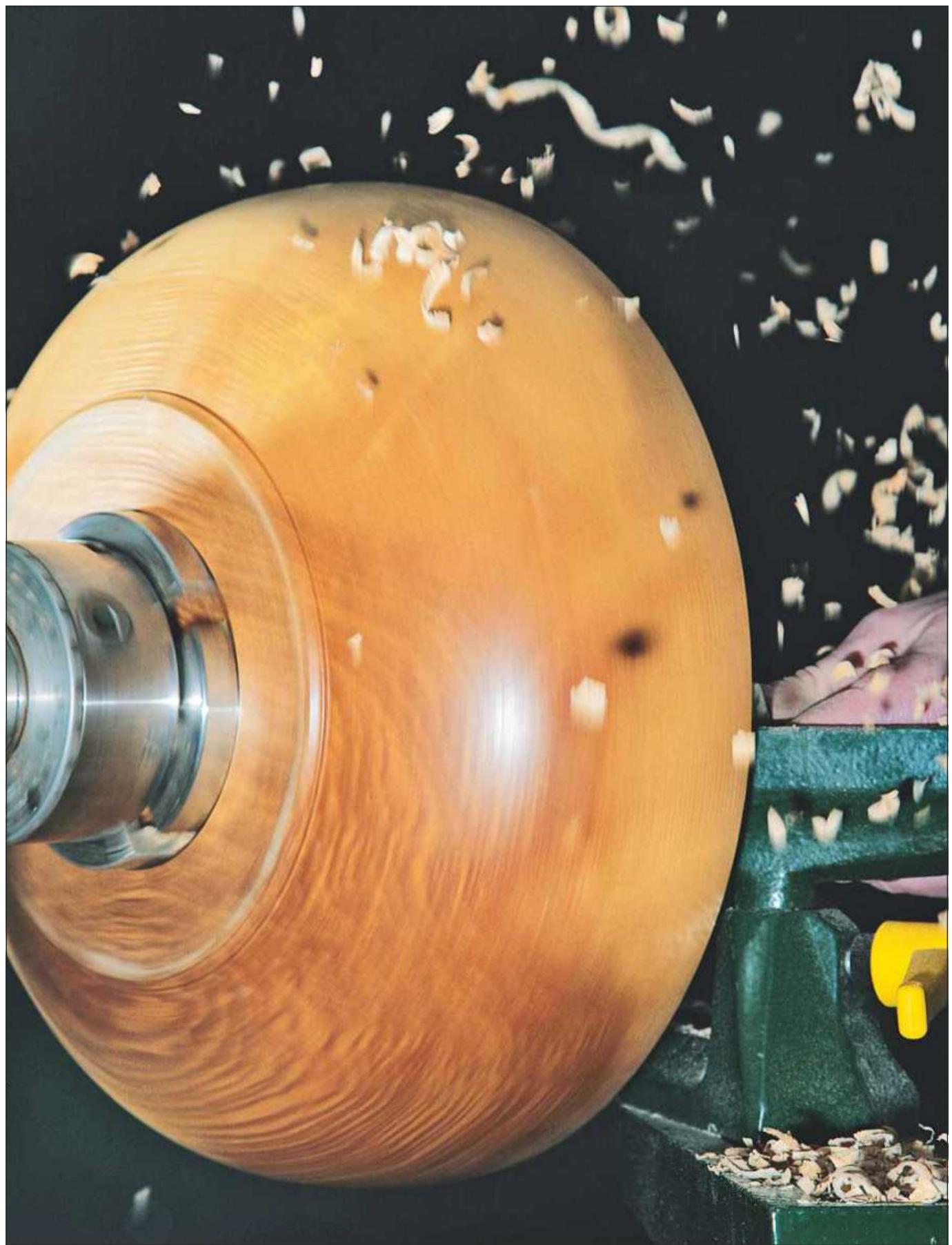
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1 The scroll chuck is the most popular and widely used chuck type



BY ALAN HOLTHAM



2 Stick to one of the well-known manufacturers and you won't go wrong

Abetter (but more expensive) long-term answer is to buy some form of woodturning chuck. The scroll chuck has become the most popular and widely used type, **photo 1**, mainly because it's so simple to operate.

This style of chuck has revolutionized the work-holding process, and has both simplified and speeded up virtually all woodturning operations. Although not an essential piece of kit, it is fair to say that your woodturning career will eventually be hampered unless you take the plunge at some stage and invest in a scroll chuck.

There are many different models available from a range of manufacturers. If you're bewildered by the choice, stick with one of the well-known makes and you won't go wrong, **photo 2**. They are all basically the same as regards function, the main differences being in the range of additional jaws that are available.

One-handed operation

They work on a similar principle to the engineer's self-centring chuck, where an internal threaded scroll draws all the jaws together simultaneously. This scroll is operated with either a hexagon wrench or a more conventional chuck key, **photo 3**.

Of course, the main advantage of this is that you can open and close the jaws one-handed, so the chuck can be left on the lathe as you hold the work with one hand and tighten the chuck with the other, **photo 4**.

Some chuck keys have a swivel arrangement that allow them to be angled away from the chuck body, **photo 5**. This is very useful if you're gripping large diameter

4: Using scroll chucks

In the last issue, I looked at faceplates and screwchucks for holding the work and highlighted the fact that although they're very useful, these are invasive methods of holding a workpiece, in that they inevitably leave screw holes that must be dealt with later in one way or another. So what's the alternative?



3 The scroll is operated by a hex wrench or a conventional chuck key

flat work that might otherwise interfere with the rotating action of the key.

Different threads

Lathes all seem to have different threads on the spindle nose, and the various chuck manufacturers obviously have to accommodate this if they are to make their chucks universally acceptable. Some do actually offer the chuck with the back bored to a specific thread, **photo 6**, but although it's the most accurate solution in engineering terms, it obviously increases the stock-holding requirements of the suppliers. Other manufacturers overcome this problem by boring the chuck body with a single large thread and then supplying a range of inserts to suit the various lathes, **photo 7**.

Boss is best

This is usually fine, but there are a couple of potential problems. For a start, using a boss introduces another source of inaccuracy; you now have two screw threads that must be aligned perfectly. Secondly, the boss will often extend the amount of overhang on the chuck, which again can lead to accuracy and vibration problems, **photo 8**. However, having said all this I've never encountered it as a serious problem provided you stick with the good-quality makes.



4

Hold the work with one hand and tighten the chuck with the other

The big advantage of the threaded boss arrangement is that you can update to a different lathe without having to reinvest in a new chuck. All you have to do is change the insert, which will cost just a few pounds rather than the hundreds necessary for a new chuck.

A little leverage

There is a halfway house in the world of scroll chucks, in the form of lever-operated versions, **photo 9**. Instead of the single chuck key providing the jaw movement, this type uses two levers.

The advantage of this arrangement is that



5

Some chuck keys have a swivel action that's easier to use



6

Some chucks have the back bored to a specific thread...



7

...while others are supplied with a range of separate inserts



10

The result is a slimline chuck with very little overhang



11

The work has to be mounted horizontally while it is off the lathe



12

The jaws are normally fixed with a couple of small machine screws...

it's cheaper to produce and also results in a beautifully slimline chuck with very little overhang, **photo 10**.

The big disadvantage is that it requires two hands to operate, and the work therefore has to be mounted horizontally while it's off the lathe, **photo 11**. Although this is quite straightforward it does take a lot longer, as the chuck has to be removed each time.

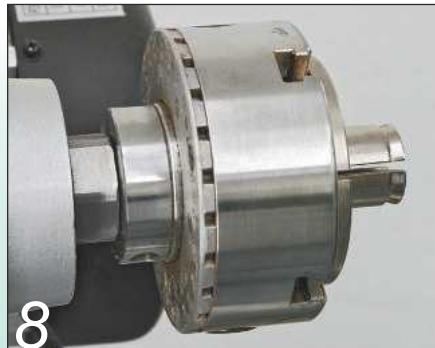
Jaws and carriers

The one thing all of these chucks have in common is that they form the basis for a huge range of different jaws. The jaws are normally fixed to the chuck with a couple of small machine screws, and this is often the fiddliest part of their operation, **photo 12**.

It's very easy to lose one of the screws amongst all the shavings on the bench, **photo 13**, so it's a wise precaution to buy a few spares as soon as you get the chuck and keep them somewhere safe for when you need them. You will find that each jaw and carrier on the chuck is numbered, and it's good practice to fit the right jaw to the right carrier, **photo 14**.

Stuck with the chuck

The range of different jaws available is often very extensive, but don't be tempted into



8

The boss will often extend the amount of overhang on the chuck



13

...which are easily lost on the workbench.
Always buy a few spares

buying too many at the start. Some of them have distinctly specialized applications that you will probably rarely use, and you are far better waiting until you find a definite need for a particular jaw type.

Unfortunately there is no standardization here. All the manufacturers produce their own jaws which are not interchangeable, so once you have bought into a chucking system you're stuck with it.

Two-way performer

Most chucks come with a mid-range set of jaws, usually in the region of 50mm in diameter, **photo 15**. This is actually the most useful size, and will cover a vast range of work.

Remember that with a scroll chuck the same jaws are used for expansion and contraction, so if you're making a bowl you have the choice of turning a dovetail recess in the base or forming a spigot, **photo 16**, with the same jaws being used for both operations. This is a significant advantage over most of the other chuck types that require separate jaws for expansion and compression modes.

All-round grip

These chucks are not restricted to faceplate work either. You can use them to grip round stock, so you can either hold a complete cylinder, **photo 17**, or turn a gripping spigot on the end of a bigger diameter piece, **photo 18**.



9

Instead of a single chuck key, this type uses a pair of levers



14

You'll find that each jaw and carrier on the chuck is numbered



15

Most chucks come with a set of jaws about 50mm in diameter



16

The same jaws are used for expansion and contraction holding

I regularly use my scroll chuck for holding square work as well, which is particularly useful if you're gripping something like a table leg or stair spindle that incorporates both round and square sections, and where accurate centring is obviously critical, **photo 19**. Gripping the square timber in the chuck is guaranteed to give perfect alignment, whereas relying on getting it spot-on using a drive centre is less so.

However the jaws may mark the corners of the square section slightly, which may or may not be a problem.

Shark attack

I particularly like the 'shark' jaws, which have a very deep gripping surface. This is ideal when you want better access to the rear of the work, **photo 20**, and they are particularly good at holding very long

workpieces which are unsupported at the tailstock end, **photo 21**.

Those of you who have struggled making goblets and pomanders will particularly appreciate this function. Provided you have made the spigot truly parallel and the shoulders are slightly undercut, the grip is amazingly firm and rigid, **photo 22**. However, it will also highlight any degree of slackness in the lathe bearings!

Using pin jaws

The standard pin chuck is well known as a means of holding pre-bored work, but it does rely on very accurate drilling for a secure hold. The use of pin jaws on a scroll chuck obviously allows you to vary the diameter of the pin and the drilling becomes far less critical, but the hold is more secure. Like many of the jaws, this set is multi-functional in that there is also a dovetail machined on the end, so they can be used in expansion mode in the bottom of a very tiny bowls, **photo 23**.

Gripping bowls

If you do a lot of bowl work, it's worth investing in a set of large jaw plates. Used in conjunction with adjustable plastic buffers, these are an excellent way of holding finished work without marking it, **photo 24**.



18

It can also grip a spigot on the end of a larger-diameter piece



19

The chuck can also be used for holding square-section work



20

'Shark' jaws have a deep gripping surface and improved rear access



24

Large jaw plates are worth buying if you do a lot of bowl work



25

They're not very accurate, but are useful for quick clean-up jobs



26

The best scroll chucks have a jaw restraint as a safety feature



17

The chuck can grip round stock such as a complete cylinder

I use my jaw plates mainly for holding completed bowls while I remove any evidence of chucking from the bottom, but they are also good for holding awkward shapes. It must be said that these jaws are not fantastically accurate in the way they hold the work, but they are good enough for these quick cleaning up jobs, **photo 25**.



21

They're good at holding very long, unsupported workpieces

Safety first

Scroll chucks are very safe as there is very little sticking out that you are likely to catch your hand on, though you have to be more careful if the jaws are fully extended. Incidentally, the better chucks have a safety feature in the form of a jaw restraint to stop them all coming out together, **photo 26**.



22

The 'shark' jaws' grip on the work is amazingly firm and rigid

Notice that on some chucks the back plate incorporates a dividing head, **photo 27** – one of those features that you use a very rarely, but very handy when you do actually need it.

The woodscrew chuck

For the initial holding, while you turn some form of chucking recess or spigot, a woodscrew chuck is quicker and easier to use than the conventional faceplate. Even very large, irregular workpieces can be held on a heavy-duty machined screw, and these are usually supplied as standard with a scroll chuck.

Provided you drill an accurately sized pilot hole to accommodate the screw, it has a very powerful hold, but it's best to use it in conjunction with some large jaws to maximize the support, **photo 28**.

Summing up

Once you have bought your lathe and kitted yourself out with the basic tools, I would suggest that a scroll chuck should be your next serious purchase. It may seem very expensive compared to the outlay you have already made, but the cost will be more than repaid in the future in terms of simplified and frustration-free work holding.



23

The standard pin chuck is an ideal way of holding pre-bored work

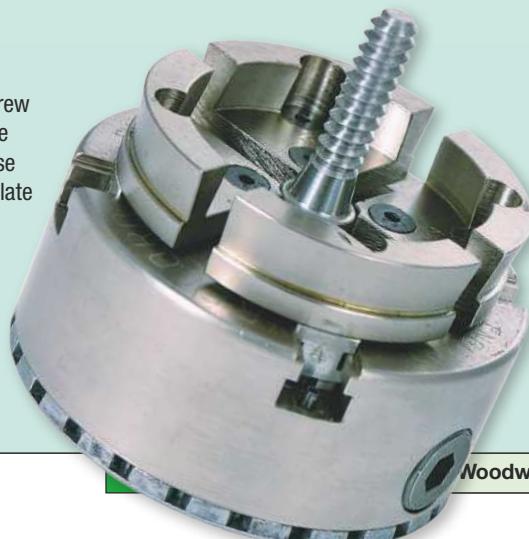


27

On some scroll chucks the backplate incorporates a dividing head

28

The woodscrew chuck can be quicker to use than a faceplate



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Alan looks at how to choose suitable timber for turning, and gets you on the way to turning your first real project

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I hear there's a new drill driver in town – nothing unusual about that in these days of rampant industrial development fuelled by society's bottomless hunger for anything new, improved or just a different colour. I took a look...

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ACCESSORIES	two batteries, charger, fabric carry case

VERDICT

This is a well-designed drill driver with plenty of torque for making big fixings.

- PROS**
- Very sturdy design
 - Long run time
 - Comfortable grip

- CONS**
- None

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One of the newest additions from this Australian owned company – probably best known for the classic Super Jaws work holding system, and a tasty router or so – the Triton T20DD drill driver is a rugged machine designed to cope with all you can throw at it. I did just that.

All the standard control features are in place, and I felt that there was no danger of anything getting switched or changed accidentally. Although the drill is unremarkable in its layout, there's something about the shape of it which seems somehow to increase its power and torque. I'd been drilling and screwing with it for quite a while before I realised there'd been no charging, and the Triton was still hungry for work.

Rugged design

It has a cleverly moulded body with rubberised reinforcements in key areas, and I'm pretty sure that the designers got things right. My way of working on site is just slightly less than careful, and it wasn't long before I lost the drill off the top of a 3m

scaffold tower. I'm glad to say that no harm was done, although I did wake up a dozing painter with the clatter.

Ample power

I liked the power of this drill and later, when I took it to one of my teaching classes, the Triton was the one the students went back for time and time again. Clearly it has more going for it than just a snappy colour scheme, and popular opinion was that comfort and performance rated high enough for continued usage.

Bagged not boxed

Most power tools these days come in a case of one sort or another. At first glance the tough fabric of the Triton hold-all struck me as a bit of a cop-out, but I soon came to admire the big mouth capacity of the zippered bag, let alone the numerous pouches adorning each side. Very little time was wasted in cramming it up with a whole bunch of sundry tools and fixings; harder to do with a rigid structured case. MC



The Triton 20DD is a rugged drill, its body well protected with rubberised reinforcement



It features 19 torque settings and a modest but entirely adequate LED worklight



The battery charger takes up to 90 minutes to deliver a full recharge



The full kit includes a second battery and a strong fabric carry case

Bosch's new Power-4-All range uses a re-chargeable 18V lithium ion battery to power a number of tools for the home and garden, including this single-speed delta-shaped multi-sander

Bosch PSM 18Li cordless multi-sander

This smart little sander is suitable for most sanding tasks when fitted with the right abrasive. The casing is manufactured in high-impact plastic with a soft-grip rubber handle, making it comfortable to hold for long periods.

Standard features

The on/off switch is on the front of the machine and can be locked in position so there's no need to hold it down. The overall shape is very like a domestic iron, and it's well-balanced and stable when

£70
(web price)



sitting on a bench not in use. It comes in a strong plastic case together with the battery and charger and three abrasive sheets.

The sanding plate has an orbital stroke rate of 22,000 strokes per minute with an orbital diameter of 1.6mm to give a smooth finish. The front triangular plate can be removed to fit one of two optional sanding accessories that increase the tool's versatility.

Charging time

The battery slides easily into the machine and clicks into place. It takes about 90 minutes for a full charge and can be topped up at any time. It doesn't lose its charge when not in use. The battery charger has an indicator which shows a flashing light when charging up and a continuous green when the battery is fully charged.

The sander itself has a battery charge control indicator at the front of the machine to show the state of the battery. Three continuous green lights means 66 to 100 per cent charged, two 34 to 66 per cent and one 11 to 34 per cent. A flashing green light warns that there is under 10 per cent of charge and the battery needs recharging. The battery is protected against overload, and if the machine becomes too hot in use the indicator will flash rapidly and will cut out. An additional spare battery costs in the region of £30.



The two-part sanding plate is perforated for efficient dust extraction



The front section can be removed to allow accessories to be fitted



The battery charger shows a steady light when the battery is fully charged



The dust collection box is fitted with a paper filter and is easy to empty

Abrasive sheets

Although three abrasive sheets are included with the sander, you'll soon need to purchase more. Red coloured sheets are for sanding wood and are available in single or mixed packs in 40 grit (coarse), 80 and 120 grit (medium) and 180 grit (fine). White sheets are designed for paint, primers and fillers: use 40 grit for sanding off paint, 80 or 120 grit for primers and fillers and 180 grit for final sanding of primers before coating.

Each Velcro-backed sheet comes in two parts which fit onto the sanding plate. The sheets are perforated to allow the dust to flow through, and should be correctly aligned to match the holes on the sanding plate for maximum dust removal. Each part can be changed individually depending on the degree of wear, but they need to be the same grit size.

The front sanding plate can be removed so that one of two optional accessories can be fitted. These extend the front sanding plate, and require separate sanding sheets.

Dust collection

The sander has a removable plastic dust collecting box which clicks into the back of the machine. It contains a paper filter and it's easy to see when the contents need emptying. With the box removed the sander can be attached to a 30mm diameter extractor hose.

With either extraction method I recommend wearing an en149 FFP2/S face mask. If you can sand outside in the open air, so much the better, thus keeping the workshop free of escaping dust.

Summing up

This machine is well designed and robustly built and should cope with most of the requirements for both hobby woodworkers and general DIY use. The ability to use the battery in ten other Bosch machines is appealing and reduces the number of battery chargers required; most of us already have too many of them cluttering up our workshops!

There has been a great advance in battery technology, and Li-ion offers greater power and reliability. More and more cordless tools are coming onto the market offering ease of use and excellent safety. This is definitely one of them. **IW**

SPECIFICATION

BATTERY	18V 2Ah Li-ion
SANDING PAD AREA	104sq cm
NO-LOAD SPEED	22,000rpm
OSCILLATION CIRCUIT	1.6mm
CHARGING TIME	90min
WEIGHT	13kg
ACCESSORIES	3 sanding sheets

VERDICT

This is an excellent small sander with multiple uses in a compact and easy-to-use package.

- PROS**
- Easy-change battery
 - Good range of abrasives
 - Comfortable to use

- CONS**
- None

VALUE FOR MONEY



PERFORMANCE



FURTHER INFORMATION

- Bosch
- 01895 838743
- www.bosch-do-it.com

The sander is comfortable to hold for long periods and easy to manoeuvre



Simply press this red button to release the battery from its housing



The battery slides in and out of its rear compartment smoothly and easily



Separate sanding sheets are fitted to the two sections of the sanding plate

A bench-mounted disc sander is a very useful piece of equipment for a wide range of shaping and finishing jobs. This is the latest model of the Proxxon disc sander, and it has been greatly improved

Proxxon TSG 250/E disc sander



£254.95

The machine is constructed in die-cast aluminium and reinforced polyamide with an extruded aluminium table. There is a hand grip built into the back casing so the machine is easy to lift and move. The on/off switch and the variable speed dial are mounted on the rear of the machine but within easy access. The table now has a T-slot to take a calibrated, adjustable mitre fence which previous models didn't have.

Sanding discs

The 250mm diameter machined aluminium disc has a silicone-covered surface so the self-adhesive sanding discs can be replaced easily and will stay absolutely flat. This is a great improvement on previous versions of this sander, where the sanding disc had first to be prised off and then the aluminium disc cleaned up to remove any remaining adhesive.

The front housing cover, with the table attached, can be completely removed by undoing two hex screws. This improves access and makes it so much easier to change discs and to clean inside if necessary. Proxxon sanding discs are sold in packs of five in 80, 150, 240 and 320 grits.

Dust extraction

A dust extraction take-off pipe is fixed to the rear of the machine and will fit a range of extraction systems. The dust extraction works very efficiently when connected to an extractor as the dust is pulled downwards.

The instruction book stresses the advantage of using a vacuum extraction system to remove a high percentage of dust. However, it also suggests using the disc sander to sharpen bladed steel tools. Sparks will fly, and in this case a dust extractor should *not* be used as there is a very real risk of a fire in the dust bag!



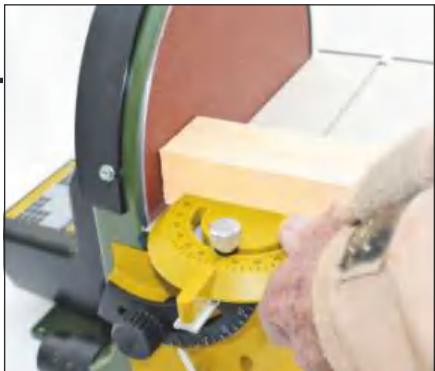
The sanding table can be tilted by up to 15° upwards and 45° downwards



There is a clearly marked scale for setting the angle of the table



The table now has a T-slot to take a calibrated adjustable mitre fence



The disc rotates anti-clockwise; always use the area on the left of the centre line to sand your work

Recent improvements

Several changes have been made to this latest model. For example, the earlier model was relatively unstable and had to be bolted down to a base. By extending the lower cover this problem has been overcome, and the machine didn't move at all on the bench.

The ability to change discs so easily is particularly welcome, and means one is likely to use the right grit for the job rather than making do with what is already on the sander!

Using the sander

The sander is invaluable for removing small amounts of wood at a time until a perfect fit is achieved. With the table set at an angle, mitres can be sanded and trued up accurately and edges can be chamfered.

The disc rotates in an anti-clockwise direction. Always use the area to the left of the centre line so the wood you're sanding is pulled downwards rather than being lifted up, which would tend to happen if you used the right-hand side. The distance between the edge of the table and the disc is 2.5mm when the table is set at 90°. Very small workpieces could be pulled down into this gap; it's safer to stick the small piece to a larger one with hot-melt adhesive for better handling.

I have also tested this machine for sanding acrylic sheet, cork, rubber, glass fibre and even metals. A liquid cooling system accessory is available which fits above the machine.

Summing up

Like most German imports this machine is expensive, but my older model has stood the test of time over many years and it is still going strong, so I feel it was money well spent. The abrasive discs aren't cheap, but if used wisely and cleaned up regularly they will last a considerable time. *IW*

SPECIFICATION

MOTOR	280W
NO-LOAD SPEED	250-750rpm
DISC DIAMETER	250mm
TABLE SIZE	275 x 105mm
TABLE TILT	-15° to +45°
WEIGHT	6.3kg

ACCESSORIES mitre fence, four sanding discs

VERDICT

This disc sander is well made and finished, and accurate and efficient in use.

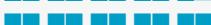
PROS ■ Easy disc changing system
■ Quality of build
■ Excellent dust control

CONS ■ Spare discs are quite expensive at £11.26 for five

VALUE FOR MONEY



PERFORMANCE



FURTHER INFORMATION

- Brimarc
- 03332 406967
- www.brimarc.com

With the table angled, mitres can be sanded and edges chamfered



Standard self-adhesive sanding discs can be removed and replaced easily



The front housing cover can be completely removed for cleaning inside if necessary



It also improves access and makes it so much easier to change discs



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Reciprocating saws have been around for quite a while now, and can be a very versatile and useful alternative to a hand saw. Here's a new small-scale addition to the power sawyer's armoury

Triton T12RS reciprocating saw



£100
(web price)

SPECIFICATION

BATTERY	12V 1.5Ah Li-ion
NO LOAD SPEED	0-3400spm
STROKE	12.2mm
BLADES	1/2in universal shank
CHARGE TIME	60min
WEIGHT	1.3kg
ACCESSORIES	two batteries, charger, two blades, soft case

VERDICT

This is an excellent little saw that will get you out of many a tight corner.

- PROS**
- Compact design
 - Easy blade change
 - Long runtime
 - LED worklight

- CONS**
- None

VALUE FOR MONEY **PERFORMANCE**

FURTHER INFORMATION

- Triton Tools
- 0844 576 1266
- www.tritontools.com

They say that a good big 'un will beat a good little 'un every time, but after my recent experiences with the new Triton reciprocating saw I'm not so sure. My situation involved cutting an old rafter out from its position very close to a gable end wall. I started the cut with my regular recip – a full-size cordless version – but it soon became clear there wasn't enough room to get the saw in for the whole cut. Then the one good battery failed and the decision was taken out of my hands. As I reached for my trusty handsaw, I remembered I had this saw in for review and thought: what better way to test it?

Charge to spare

Back up the scaffold it soon became clear that this was indeed the right tool for the job, and, after turning the blade round for improved access I was able to sever the rafter neatly and prepare for its replacement. During the job I found it gratifying to note that the battery was sufficiently charged from the factory to get nearly the whole way through.

They generally have just enough charge to power up the tool in a sales demonstration.

Mini rules OK

After struggling with my own full-sized machine for too long, the agility of this mini saw was a welcome relief, not to mention the reduced weight at the end of an extended reach. The way things are going in terms of motor efficiency and engineering generally, it won't be long before nearly every power tool will be a compact like this one.

It's sturdily constructed, and is heavy enough to reassure the user that there's plenty of metal moving in the precision parts that matter. The trigger has a simple on/off lock, and controls the variable run speed with intuitive ease. There's an LED worklight on the business end, and blades change with an SDS-like twist of the shank collar. It really is as simple as that. Throw in a charger and another battery – all packed in a reinforced and pocketed soft case – and you've got yourself a very neat and useful get-out-of-jail saw. I for one won't go back to a full-size big 'un again. MC

Comfortable one-handed operation is useful in confined spaces



The compact 12V battery is completely recharged in around 60 minutes



The saw comes with two bi-metal blades to get you started. They're very simple to fit



The saw, two batteries and the charger all fit in a neat soft case

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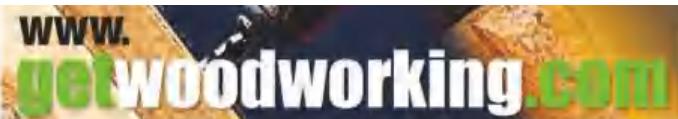
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FOR SALE

Axminster lathe, variable speed, 175mm over bed, 850mm between centres, headstock slides and swivels, with accessories; £160 (cost £400 new). Buyer collects.
01747 838770 (North Dorset)

Handicraft Annual 1936; interesting book featuring tool kits, items to make, wood and mouldings for sale etc; £28 inc p&p.
07940 704570 (Kent)

Hardwood boards, Indian laurel, bocote, she-oak and others. Please call for details.
020 8675 0132 (South-west London)

Pfeil palm-held carving tools, set of 12 for wood and lino, in excellent condition, wooden box included; £75.
01539 533410 (Cumbria)



Record Power lathe, CL1 cam variable speed model with CL3B bowl attachment, two faceplates, Dakota chuck, Steb centre and some tools; £300. Buyer collects.
01483 893068 (Surrey)

Trend Airshield Pro, never used, so complete and still boxed; £110. Buyer collects.
01723 871881 (North Yorkshire)

Record Power PT260 planer thicknesser, excellent condition; £375. Buyer collects.
07900 320742 (South Yorkshire)

Scheppach ha2600 extractor; £170. Delta fretsaw; £50. More than 400 UK and US woodworking magazines from 1970s to date; £50 the lot. Buyers collect.
01942 726985 (Cheshire)

Record Power machinery – BS300E bandsaw, PT260 planer thicknesser, CX2600 dust collector – plus Rexon BT2502AE table saw, Draper GD13/5C drill press and Bosch GCM10 mitre saw. £1000 the lot.
01367 242724 (South Yorkshire)

Record No 52½ vice with quick release, in very good order; £60.
01295 710526 (Oxfordshire)

Elu 1163 thicknesser with chip extractor and spare knives; £420. Record No 3 lathe, 36in bed, plus chucks, chisels and bench; £280. All in good condition.
01788 817408 (Warwickshire)

Administer dovetail/boxcombing jig plus three cutters, little used, new price £120, will sell for £45. Buyer collects.
01536 722721 (Northamptonshire)

Hardwood beams, 7ft long, 8 x 4in, South American hardwood. Phone for details.

01349 880047 (Ross-shire)

Record lathe, model DML 24X, with stand, chuck, tools etc; SIP 6in planer; Silverline mitre saw. £500 the lot. Buyer collects.

01406 350848 (Lincolnshire)

Vintage wooden bowsaw with 9in blade, in good condition; £25 plus £5 p&p.

01446 710506 (South Glamorgan)

Axminster AWVSL lathe, with new motor and speed control unit fitted; £120. Record Power DML24 lathe; £50.
07775 510724 (Essex)

Proxxon angle grinder, LHW long-neck model with case, used once so as new; £80 plus £5 p&p.
07775 510724 (Essex)

MilesCraft router 3D pantograph, boxed and unused; £50 plus £7 p&p.
07775 510724 (Essex)

Walnut boards, air-dried, seven straight-edged pieces measuring approx 2100 x 380 x 32mm; £75 each or £450 the lot.
07771 663964 (Warwickshire)

Shopsmith Mark V Plus bandsaw and planer, little used so in very good condition, can be dismantled for transport; £750.
01536 771455 (Leics/Northants)

Arundel K450 lathe, four speeds, 36in between centres, steel twin bar bed, all mounted on substantial purpose-built steel bench; £325 o.n.o.
01582 881310 (Herts/Beds)

Health forces sale of woodworking items including hand tools, machines and wood at flyaway prices; if you want something, I may have it. Please contact Alan on
01772 612903 (Lancashire)

WANTED

Woodworker magazines, pre-1951 plus 1984-1986. Grandfather collecting for cabinetmaker grandson.

01493 368180 (Norfolk)

Spiers / Norris / Henley planes wanted by private collector; any quote beaten. Ring Ron Lowe on
01530 834581 (Leics)

Woodworking hand tools, especially old wood and metal planes, wanted by collector. Write to Mr B Jackson, 10 Ayr Close, Stamford PE9 2TS or call
01780 751768 (Lincs)

Woodworking tools: planes by Norris, Spiers, Mathieson, Preston, Slater etc, brass braces, interesting rules and spirit levels; top prices paid, auction prices beaten.
01647 432841 (Devon)

USE THIS FORM TO BOOK YOUR **FREE** AD

- This space is available only to private individuals wishing to buy or sell woodworking machinery and tools.
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- Each coupon is valid for one free insertion in the next available issue.
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The
Woodworker
MARKETPLACE

Please publish this advertisement in the next available edition of *The Woodworker*. I am a private advertiser and have no trade connections.

PLEASE TICK: FOR SALE WANTED

My advertisement (max 20 words please) reads as follows:

In your own write...

Here are just a few of the latest letters we've received since the last issue. Drop us a line on paper or via screen and keyboard to add your voice to the woodworking crowd; you might be one of the lucky few who will manage to get their hands on a coveted Woodworker badge!

SNAIL MAIL OR EMAIL?

You can write to us at *The Woodworker*, MyTime Media Ltd, Enterprise House, Enterprise Way, Edenbridge, Kent, TN8 6HF or send an email to mark.cass@mytimemedia.com



SPREADING THE WORD

Hello Mark

I'm a long-retired but still active Man in a Shed. Partly as a hobby and partly as remedial therapy for my rheumatoid arthritis, I make what has been hailed as 'The best candy cart on the web'. Let me explain...

Last Easter, one of my granddaughters made a video of me erecting and dismantling the cart and put it on YouTube. Since then I've had a stream of enquiries from prospective buyers, including some



from abroad. I currently have four enquiries from the USA and one from Mexico, but all of these have been frustrated by the prohibitive cost of shipping outside the UK. One of them ends: "I can't believe that nobody makes them in the USA!"

This started me wondering if there is some like-minded old guy over there with the necessary skills of woodworking and turning who might like to earn a few bucks by making the carts to my design and standards and selling them to my enquirers and others who are not accessible to me. So I'm writing in the hope that someone will see this appeal and get in touch: I remain optimistic!

Michael Forey

Well, Michael, it has to said that's a fine cart and no mistake. I can picture it filled, decorated and brightening up a wedding reception or some such family event. I too hope that some overseas readers will get in touch, and will be glad to forward their details on to you.

Mark

Here at *The Woodworker* we're always pleased to see photos of your work, and we know everyone else is as well! So send them in now and see if you can make the cut.

DUST STORM

Here's a health warning from the Cheam Woodturners Newsletter.

It was prompted by a recent article in *Good Woodworking* magazine about someone who had a very serious reaction when using large quantities of superglue and dust from yew wood to fill a fissure in a table made from yew (shown below). The following precautions should always be observed when doing work with this product.

- Use superglue only in a well-ventilated area – outdoors, or with the workshop door open or an extractor running – as it can cause irritation of the eyes, skin, nose and throat.
- Use only small quantities unless wearing correctly rated chemical protection breathing apparatus.
- Don't use a normal dust protection helmet unless it has chemical protection as well; otherwise the fumes will be directed straight to you.
- Don't use any cloths which might include cotton as these may self-combust.
- Make sure you have an in-date bottle of the special release agent easily accessible when using superglue in case you stick your fingers (or worse) together.



Thanks to Gordon Cookson and Ron Grace at www.cheamturners.co.uk for this timely advice.

Yes, we sometimes forget the dangers inherent in our craft; it's not just sharp tools and big machines we have to worry about.

Mark

ALL RUNG OUT

With reference to last month's article on traditional ladder-making, I felt it might interest the readers to know a bit more about the rungs (Geoff mentions that these were prepared beforehand). In the old days these were never turned from sawn timber, but rather from suitably sized sections of wood that were hewn from a larger log. This way it was guaranteed that you'd never get a bit of dangerous short grain in a rung.

Tom Peters

Thanks Tom. That makes entirely good sense when you think about it. I'm much obliged to you for pointing it out!

Mark

Furnishing the small house

To have a really comfortable and efficient kitchen is an absolute joy. If you've got the space it can easily be the best room in the house, and will always be the beating heart of a happy home

A lot of readers will likely have experience of fitting or modifying a kitchen, and I hope that these are mostly happy memories and not cringing remembrances of semi-disasters and sad disappointments. This project article in *The Woodworker* of April 1955 would have given support and encouragement to a country starting to find its feet and confidence again after the war – a welcome boost for most of the population still experiencing shortages of ready-made furniture and fittings.

I have a dream

It's long been a personal dream of mine to have a kitchen with a separate breakfast bar or alcove, but a table and chairs will fortunately suffice very well. Even a simple two-seater can provide plenty of scope for that unbeatable cosy, secure feeling of eating in the kitchen with seconds nearby and a simmering kettle on the hob within arm's reach.

Comfort at a price

The design pictured here, a classic mid-century example, is sufficiently considered so as to provide a good-looking and functional dining arrangement, yet at the same time making the fullest use of available materials. It's worth noting that special mention is given to the latex foam rubber for the cushions. Despite being 'one of the least expensive items to buy' it was subject to a heavy purchase tax, presumably because of its scarcity at that time.

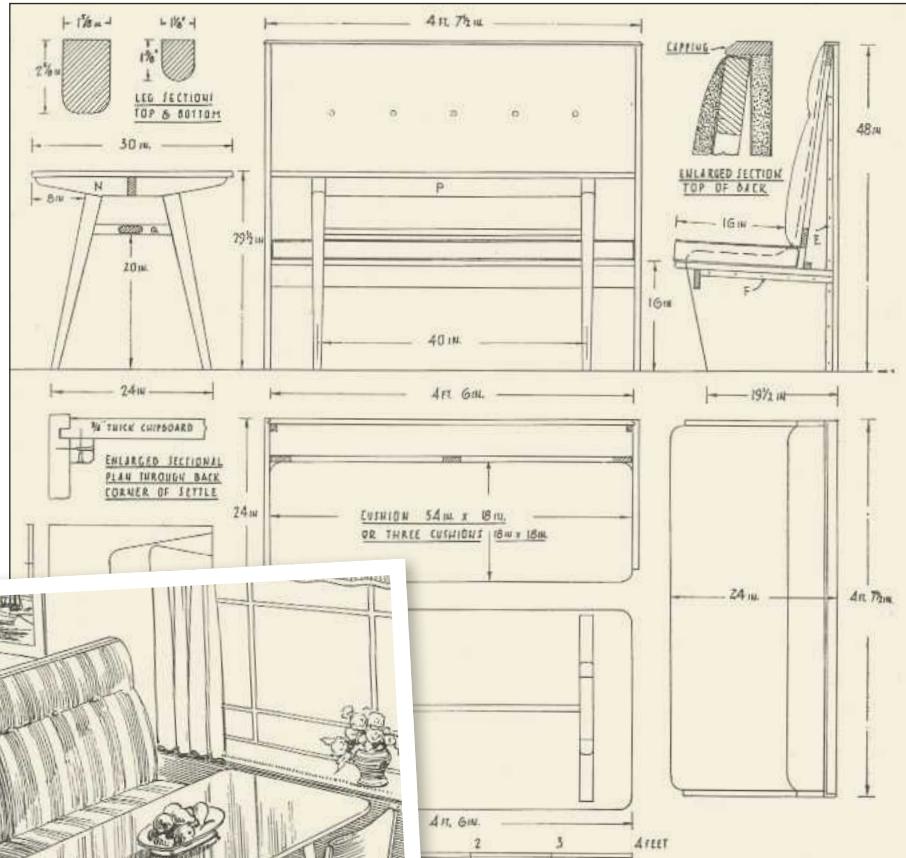
Timber options

A veneered particle board or multi-ply is recommended for the bench seat (with the aforementioned upholstered cushions), but



no advice is given about materials for the table apart from the statement that it would look good in ash or chestnut. It's a safe bet that most readers would have assumed beech as the primary timber, but pretty much any hardwood would do.

A plastic-covered ply is suggested for the table top, or at least something hardwearing



and washable. There's no mention of Formica though; this was probably just coming into common usage at about this time, and as yet only available to the trade.

It's a nice enough job and no mistake. If the budget – and the size of the kitchen – could stand it, making another bench would have created a restaurant-booth style of project and really added to the cosy factor in the most important room of the house.

If any readers have built their own kitchens in the recent past, I'd really like to see them, especially if they're slightly out of the ordinary!

Mark

More from *The Woodworker* archive next month...

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Fitted with a pre-dressed, high-grade grindstone and leather honing wheel, the Triton Wetstone Sharpener produces a polished, razor-sharp edge on cutting and shaping tools.

Used in conjunction with the supplied honing compound, the leather honing wheel delivers a finely polished finish, ideal for hand tools, knives, plane irons, chisels and other wood carving tools.

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Pre-dressed and ready for use, the high-grade diamond grindstone can be easily and quickly re-dressed with the provided stone grader. The 120W induction motor provides long-lasting, smooth performance and rubber feet keep the machine steady and minimise vibration for a perfect finish.



PT107 10" x 7" Heavy Duty Planer Thicknesser

The PT107 is perfectly suited to the discerning woodworker who expects professional and reliable performance from a solid, durable and compact machine. Whilst compact enough for smaller workshops and ideal for serious home or trade users, this machine boasts some impressive industrial features and is exceptionally smooth and accurate in operation.

If you are in the market for a good planer thicknesser then check this out at one of our display stockists to fully appreciate the value on offer.

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"The PT107 is extremely well built, with heavy cast iron tables polished to a fine finish."

This machine feels more like a proper industrial model in use. The sheer weight minimises any vibration."



The Woodworker

"Top Quality - This is a very well made machine with full adjustment of both infeed and outfeed tables. This is unusual in a home workshop machine and allows very fine adjustment to eliminate any gouging at the end (snipe)...Results are excellent, chip clearance is good and the changeover from planing to thicknessing is quick and easy."



DesmondW, Online Review

Central Column

The thicknessing table is supported by a sturdy central column for superior stability and easy rise and fall adjustment.



Cutter Block

The three knife cutterblock ensures an excellent finish.

Sturdy Fence System

The fence can tilt up to 45° and is supported by a strong mounting system.

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Westcountry Machinery 4 wood Beacon Kilns, High Street Village, St Austell, Cornwall, PL26 7SR **01726 828 388**

Jaymac (Derby) Ltd 852 London Road, Derby, Derbyshire, DE24 8WA **01332 755 799**

Toolite Co Unit 3/2 The Mews Brook Street, Mitcheldean, Gloucestershire, GL17 0SL **01594 544521**

Tewkesbury Saw Co Ltd Newtown Trading Estate, Tewkesbury, Gloucestershire, GL20 8JG **01684 293 092**

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J Carr & Son Ltd 9-10 Hornastle Road, Boston Lincolnshire, PE21 9BN **01205 351 555**

D&M Tools 73-81 Heath Road, Twickenham, Middlesex, TW1 4AW **0208 892 3813**

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OXON Fastenings Systems Academic House, Oakfield Ind Est, Stanton Harcourt Rd, Eynsham Oxfordshire, OX29 4AJ **01865 884 022**

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